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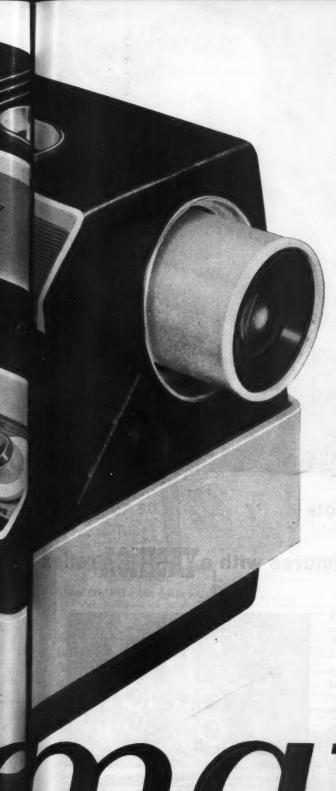


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PICTURE TAKING IDEAS

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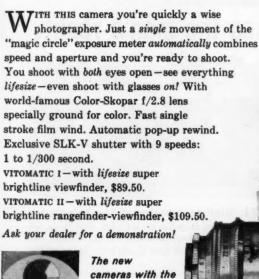
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LETTERS TO THE EDITOR

Story of a Man

Since you first announced your intention to publish an article on Dr. Roman Vishniac and his work, I have waited patiently to see the results. My sincere congratulations to you and particularly to Mr. Keppler for having made available to the general photographic public the fascinating story of the man and his work. The large foundations could do far worse with their funds than lend this man their support on a full-time basis.

Herbert S. Dunkerley

Schenectady, N. Y.

Who Is The "Village Idiot?"

In what appears to be a tirade against progress, reader Hays recently leveled an accusatory finger at the manufacturers of photographic equipment, charging the latter with oversimplification and automation to the point where even the "village idiot" can now produce technically acceptable results.

Obviously Mr. Hays has confused the purely mechanical aspects of photography with the artistic, since the former in no way encroaches upon nor jeopardizes the latter. On the contrary, it frees the photographer from the shackles of otherwise time-consuming mechanical chores, giving him more time to compose, etc. The ability to read a light meter (even the noncoupled variety) is no index of artistic acumen; it is a task-no more, no less.

It must be remembered that while the average "village idiot" can produce an acceptable picture of a naked girl, for example, his results (even with the same equipment) will be a far cry from one of Peter Gowland's

productions!

Using reader Hays' own argument, the fine photographer of 50 years ago (and they were legion) might shake his locks in dismay over even our simplest cameras of today as compared to what they had to work with, and consider us to be the "village idiots" after all! Where does one draw the line, any-

Taunton, Mass. Philip Blinder, M.D.

A Camera Is for Pictures

Sirs:

A couple of years ago I bought my wife a Rolleiflex, as part of what I thought would be a shrewd maneuver to achieve more indulgence for my

MODERN PHOTOGRAPHY

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own photographic pleasures. Like a woman, she refused to show the slightest interest in the language, gadgets or mechanics of photography beyond the basic minimum needed to achieve a picture. She did come around to using a meter only after a year's campaign on my part, but she would have no truck with filters, ASA numbers (once she set her meter for Verichrome Pan at 160 she never varied either film or rating), developers, flashbulbs, etc.

Just as a woman who believes a car is for driving and cares nothing for the nonsense under the hood, she thinks a camera is for pictures. I must admit that I and others like me. fortu-

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A camera is for pictures.

nately for the industry, enjoy the paraphernalia and equipment as much as the pictures that eventually we must produce. (I have convinced myself that there is nothing wrong in desiring to collect cameras, any more than it is considered immoral to collect antique cars.)

To my mixed feelings of dismay and delight I think the pictures my wife has made in her obliviousness to lens resolution, time and temperature, LVS, etc.—are perfectly lovely.

The picture of the Mexican boy (above) was taken at San Miguel Allende, Mexico.

Laurence Lustig Irvington-on-Hudson, N. Y.

New Home for Old Slides

Sirs:

I am donating a projector, screen, etc. to three hospital departments. Was wondering if some of your readers would care to donate a few slides (35mm) to help out. If they do, please write on the outside (except envelopes) the word "free," otherwise there is a duty of 28½ percent on slides.

210 Forest Hill Stanley Ubsdell Fredericton, N. B.

May, 1959



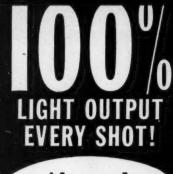
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Coffee Break with the Editors

THIS MONTH'S COVER . . .

Crossword puzzle designed by art director Ernest Scarfone—filled in desperation by editors. Pelican (long lens) by Leonard Balish (Grenada, incidentally, B.W.I., F.Y.I. and a 300mm at that). The roll of film at the top of the cover—well, it wasn't by Kodak, but by artist Anthony Palagonia. And that long, long lens at the bottom is Kilfitt's 300mm. Is a long lens really for you? Page 76 will provide that answer. And don't overlook Modern's special report on Japanese photo equipment used in the United States (following page 98).

SAFE DEPOSIT . . .

We note with some apprehension that one large city bank has installed a 16mm movie camera focused on the tellers' windows. It's carefully concealed in the wall ornamentation. When a desperado (kind old lady or gangster with gun) appears at the window and asks for the bank assets, the teller presses a release with his or her foot and the movie camera records the scene. Supposedly the thief gets away with the loot initially, but will later be brought to justice on the basis of the telltale footage in which the thief is presumably recognizable.

Since the bank took the trouble to publicize the hidden camera, we wonder whether any dyed-in-the-wool or budding bank robbers won't read the account and take warning thereof. Disguises, particularly long whiskers, artificial limps, hair rinses may become the underground vogue. Who knows, the next kind old lady may be a stand-in for Marilyn Monroe with suitable Max Factor makeup. Perhaps, the bank had better use an X-ray camera and keep quiet about it.

UNDER GLASS . . .

We never really wanted to get into the business of selling magnifiers, but it happened anyhow. In the January issue of Modern, we ran what we felt was a story on lens testing. A hitch developed-well, two hitches. To do the test properly, you needed test charts plus a good 20X magnifier. We were prepared to furnish charts, but a quick cross-country check indicated that the magnifiers were conspicuous by their rarity. We did find some good ones at \$30 but we reckoned them to be rather on the high side. We were not prepared, however, to set up an assembly line to make our own. After nearly going blind looking at test charts through all sort of magnifiers we found a really good, well made and

optically sound Japanese hand loupe for \$3 which we offered for sale to those readers who had difficulty finding them in their home town. Well, in no time at all we had cleaned out the United States supply of those magnifiers. We then began examining other brands and came up with an excellent German model. So, dear reader, you quickly disposed of every one of these and we went back into the business of finding a third source of supply. The last batch were Japanese, but had two different optical loupes. The one marked 20X under test turned out to be 10X and the 30X marked loupe was actually 20X.

Thus we did send out three different brands of magnifiers. In all we tested about fifteen which didn't come up to snuff. If you haven't sent for your test charts yet, they're \$1 a set and the magnifier is \$3. We can't guarantee which brand you'll get, but we can testify that it works.

TOURIST ABROAD . . .

It seemed to us, glancing at the prizewinners of the Saturday Review's Travel Contest (see Jan. 10, 1959 issue) that the tourist camera continues to be in a bad way. Alas, there again are the old saws and S-curves and earnest local color.

Scenics predominated in this year's judging—"scenics" meant in the emptiest way. It's as if the camera-carrying tourist never once descended from steamship or rickshaw to get a more intimate look around. Where was the excitement of a market or cafe? Where was there an unposed portrait and a feeling for people? Where did the photographer relate to his environment?

Perhaps it's not what you see, but how you see it. Some of us would recommend a good English bicycle, or just a pair of feet for travel. It would slow one down, to be sure, but it might just bring the travel contest minded photographer—or his judges—somewhat closer to earth.

MAKING LIGHT "AVAILABLE" . . .

Those who've wondered, "Why couldn't they put a bulb in here, and then I'd have a flashlight as well as a flashgun"—may now rest. And wait. It's done, but so far not arrived. The Duo-Lux people in Germany who make those neat little fan-fold guns have come up with one they call the Duette. Not only have they put an accessory: in-an-accessory; they also, for the first time in a unit so small, have used a nickel cadmium cell, which means,

(Continued on page 14)

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6



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Want to bring a distant scene nearer? Just attach the quick-change tele component lens. To cover a broad area, use the wide-angle component. And when you wish to take close-ups down to 6 inches—flowers for example—just slip on a Proxar lens. No cumbersome accessories needed. And you can always shoot with the camera hand-held.

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COFFEE BREAK

(Continued from page 12)

that like the units in electronic flash, you can recharge it from your wall AC outlet. We are awaiting the flashgun with cigarette lighter, the improved model with radio, and as a convenience for the really busy photographer the one which also contains a shaving head. Available on order for the ladies, a special model, smaller, in attractive pastels.

HOW MODERN HANDLES A STORY

"It must be easy," a friend remarked to us recently. "You just sit there, read the press releases, look at the pictures and write the story."

Oh, it could be done that way-but it isn't. Just for fun, let's take a quick look at how a story does take shape at MODERN.

At 6:45 P.M., Tuesday, February 10, we attended a dinner and press conference at which the Voigtlander-Zoomar zoom lens for 35mm cameras was introduced. By 9:30 P.M. we had wangled a sample from the designers. had it home at 9:45 and at once did field tests. At 10 P.M. Bennett Sherman, an expert on zoom lenses, who had worked with Dr. Tronnier, one of Voigtlander's most famous lens designers, was alerted that the lens was in hand. Plans were made for him to pick up the lens Wednesday for complete optical examination. The next morning we called in photographertechnician Dan Budnick. Arrangements were made to get the lens from Sherman to Budnick. The resolution tests were developed and each negative examined under a low powered microscope. Sherman turned in his test report, Budnick his film. On Tuesday, the art director called in an artist and had the Sherman lens diagram redrawn to make it easier to understand and more interesting to look at. The Budnick pictures were enlarged. Sherman promised a more complete report on the lens by Friday. The managing editor was told that a four page story would have to be pulled out of the issue to make room for the zoom story. The executive editor, who had often discussed the zoom problems with the lens designer, Dr. Frank Back, began to weave all the strands together into a story plus a "Modern Test" report (see page 91).

Yes, it's true we could have looked at the lens, shot a few pictures and written a story. But that's not the way we ever do things. We feel our readers should get the very best and complete information from the real experts in the field, clear, factual, and true. It's our obligation to you. There just are no short cuts in producing a good story.



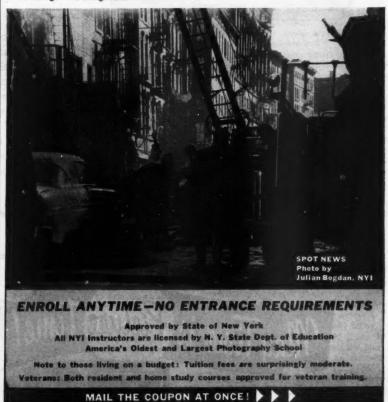
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. these are just a few of the many exciting fields where photographic training pays off. Regardless of your choice, NYI gives you the latest up-tothe-minute "knowhow" that you need for success.

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by NORMAN ROTHSCHILD

New Ektachrome in roll and sheet has more speed, finer graininess, better latitude.



There's a new Ektachrome color film which is better than the old. The film is called Ektachrome Professional E-3 and is supplied in 120 and 620 Daylight Type only. In sheets it's called

Daylight and Type B Ektachrome E-3. Increased speed, better color rendition, improved grain and resolution are claimed for it.

First, is it really faster? An increase in Exposure Index from 32 to 50 in the roll sizes doesn't seem worldshaking. But film speed doesn't tell the whole story. It's tied up with exposure latitude. This in turn affects a film's ability to come through when the chips are down. The new film's increased latitude produces good color even if you err as much as 1½ stops under or over the proper exposure.

In this writer's opinion, you'll get good shots even at 64. When conditions are right, fair results are to be had at ratings of 80 without special processing. Increased latitude shows up advantageously in normally exposed (E.I. 50) films as better shadow and highlight detail.

In sheet film the speed increases are more spectacular. Ratings are 50 for Daylight Type and 32 for Type B. Speeds for the older E-1 sheet films were 12 and 10 respectively.

Now let's turn our attention to what

I feel is most important—a great improvement in color quality. Yellows appeared much too orange in the older Ektachrome films. In the new film, yellow really looks yellow. Reds, too, have less tendency to go orange. Greens are more brilliant and blues are less blue-green than in the older Ektachromes.

Real improvement can be seen in new flesh tones. In E-3 these aren't overly reddish, even when the exposure is a bit on the short side. Neutrals, often ignored in a discussion of color, show surprising improvement. With electronic flash, a gray Savage paper background showed only a very slightly blue tinge on E-3, against a definitely green rendition for E-2. Shadows are remarkably free from muddiness and reveal hidden detail when you hold a dense transparency up to a strong light. Whites are clean and free from pronounced color casts.

Under an 8X magnifier the new film showed a remarkably fine, tight grain pattern. There's also an improvement in acuteness of detail compared to E-2. Measured against E-1, which has a phenomenally low resolution, the new Ektachrome is comparable to having a sharp instead of a soft lens on your camera.

The new film must be processed in kits plainly marked for "Process E-3." These are available in 1 pt., ½, 1, and 3½ gal. sizes. Don't use E-2 kits. You'll get inferior results.

No data is available at this writing on "pushing" E-3 for even more speed. If and when this is released, we'll tell you about it.

Ektachrome E-2 in 120, 620, 127, 828, and 35mm will continue to be marketed. E-1 sheet film will be discontinued.—THE END

Free Literature

Color slide fans will be interested in a new guide which details step-by-step plans for successful home slide shews. "Slide Showmanship—Ways to Improve Slide Shows," a colorfully illustrated 12-page booklet, also outlines pre-show preparations. For your free copy, write Airequipt Mfg. Co., Inc., 20 Jones St., New Rochelle, N. Y.

An illustrated 24-page brochure describes the Swiss **Sinar view camera**, available in sizes 8×10 , 5×7 , 4×5 , $2\frac{1}{4} \times 3\frac{1}{4}$ and $2\frac{1}{4} \times 2\frac{1}{4}$. The first sec-

tion outlines the Sinar's versatility in different areas of photography, while the second section covers the camera's construction-unit system and various accessories. For your free copy, write Karl Heitz, Inc., 480 Lexington Ave., New York 17, N. Y.

Eastman Kodak has issued a pamphlet to acquaint photographers with its new panchromatic enlarging paper. Panalure, designed especially for making black-and-white enlargements from Kodacolor and/or Ektacolor negatives. "Meet Kodak Panalure Paper" also covers filter, safelight, exposure, development and toning recommendations. For your free copy, write Sales Service Div., Eastman Kodak Co., Rochester 4, N. Y.

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Ask your dealer to demonstrate the Golden Crown or write for detailed descriptive folder: General Electric Company, Section 583.146, Instrument Department, 40 Federal Street, West Lynn, Massachusetts.

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f/STOP RANGE	f/1 to f/45
EXPOSURE VALUE SETTINGS	1 to 20 (Polaroid Land 1 to 9)

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DAN WEINER DIES IN PLANE CRASH

There are not many gifted and serious photographers. A number of journalists pile up scores of miles—but only on assignment. They wouldn't cross the street to photograph without at least a guarantee.

Few contemporary photographers have adequate technical control. Many use the limitations of available light as excuses for bad seeing—and for their own lack of craftsmanship.

Only a handful of the working press have any awareness of the meaning of other photographers' work. Few are conscious of influences, of differences, of relationships.

Very few photographers really care. Dan Weiner was a gifted and serious photographer. He didn't travel to Africa, or to Russia, or to Iowa, just because he was sent. He was not an adventurer. He was a photographer. He went because he wanted to, and because he cared.

Before the days of Tri-X, of super fast lenses, high speed developers, Weiner photographed in the New York streets at night. He pioneered in available light work, and did so without the help of today's advanced tools and techniques. He was a craftsman as well as an artist.

Weiner was a teacher as well as a photographer. He had an awareness and an appreciation of other photographers' work. His colleagues respected, liked and admired him. They say he would always listen.

The key: humanity

Dan Weiner cared very much for people. He was both human and humane. He photographed reality with warmth, with humor, with honesty, with concern. And without fear. We can see from his pictures that he was not afraid of people, for his subjects were not afraid of him. He had the courage to look people—all kinds of people—straight in the face. Then to put what he found on paper.

Dan Weiner was killed in a plane crash on January 26 near Versailles, Kentucky. He was working on an assignment for Scope Weekly, covering the activities of Dr. Halbert Leet, a Lexington, Kentucky, psychiatrist who ran a number of clinics in the Cumberland Mountains. Weiner was 39 years old.

Weiner, together with Leet (who was piloting his own Beechcraft "Bonanza"), Frank C. Bancroft, a Scope writer, and Leonard Gross, a psychology trainee, was returning from one of the clinics. They reported to the Lexington control tower that they could not land because of fog and were going to continue to Louisville. Several minutes later the plane crashed. No one survived.

Modern will reproduce a portfolio of Dan Weiner's pictures in a forthcoming issue.—The editors

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the world... He was in Germany when the first Leica was born. For 30 years he breathed, dreamed and lived Leica, "MR, LEICA" now heads our special Leica division. Joining him are two of the country's foremost experts in

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lens \$69.50.

Any 8 or 16mm movie camera can be made into a Reflex camera by using the Som Berthiot Pan Cinor lens. These 8 or 16mm 200m-type lenses come complete with a through-the-lens Reflex finder, eliminating all parallax problems. Pan Cinor 70 for 16mm cameras. \$369.50

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The 125mm Hektor F:2.5 lens is excellent for portraits, 24% magnification, fast F:2.5 aperture for avail light & color.

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Lytar F:1.8 lens only \$250.00.

The new Minibolex case will hold the Bolex B-8 and C-8 cameras with Declic handle attached. This attractive and practical case will also hold film and small accessories. Genuine leather. Made in England. Minibolex case only \$19.75. Declic pistol grip \$16.00. The Bolex M-8 projector uses the economical 500W builb, but the picture brightness is superior to that of other 750W and 1000W projectors, due to its optical system and high quality f1.3 wide angle projection lens. The automatic loop-control insures against film-tear. Price complete with case only 3143-36.

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The Hasselblad is ideal for Superslides! The new Roll-film magazine 16S is especially made for Superslides and gives you 16 properly masked slides. The magazine 16S fits all Hasselblad 500C and 1000° cameras and is supplied with ground glass mask to show exact area covered. Hasselblad Magazine 16S only \$81.00.



The magnifying hood slips on top of the Hasselblad in place of the regular hood and is adjustable for individual eyesight. It allows 2½ power critical focusing and fits all models. Magnifying hood costs only \$37.50.



Standard Series VIII Filters can now be used on all lenses for the Hasseblad 500C. The filter adapter ring #63 has a bayonet mount to fit the 80, 150 and 250mm lenses and the Distagon wide angle lens take Series VIII filters without adapter. Filter adapter #63 only \$14.50.



The exposure Meter in the accessory winding knob has the New EVS scale. You simply read the number and set the scale on the lens for perfect exposures every

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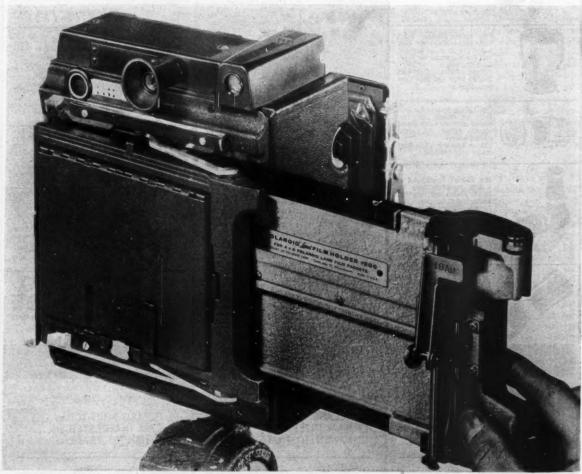
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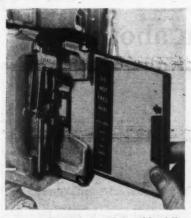
NEW POLAROID LAND 4X5 FILM HOLDER

Instantly adapts your 4 x 5 camera for 60-second pictures!

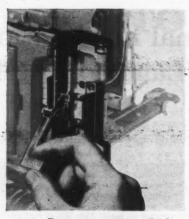


This new Polaroid Land Film Holder is interchangeable with your regular film holders. Slide it in and you're ready to produce a finished full-size 4 x 5 picture of professional quality in 60 seconds. There's no change in film plane; no readjustment of rangefinder or ground glass.

The holder remains in the camera as you shoot picture after picture without delay. A new specially designed 4 x 5 film packet contains negative, positive sheet and developing pod...all the elements necessary for making a 60-second picture.



Slip in this new Polaroid Land film packet until it engages, and pull back the protective envelope (which serves the same purpose as pulling out the slide of a regular film holder). Now take your picture.

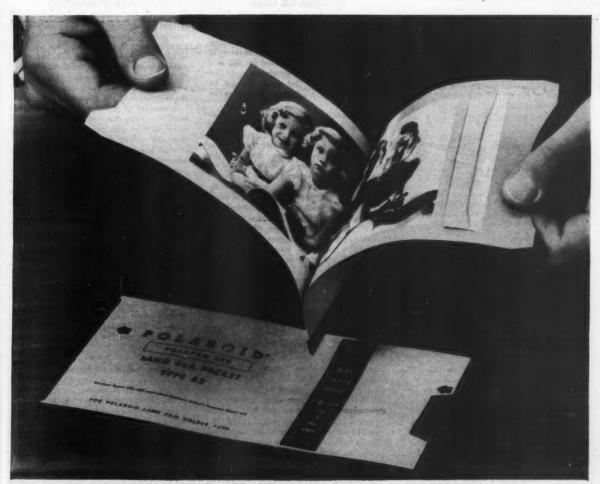


To process your picture, flip down this lever and pull the film packet out. (You don't have to wait 60 seconds before you take the next picture; you can shoot again immediately.)



Your picture processes itself inside its packet, outside the camera.

After 60 seconds, pull the packet apart and see the finished picture. If you wish, development can be postponed until any later time.



The pictures are of exceptional quality, made with either of two new Polaroid Land films. Both have high resolving power and an extended dynamic range which make pictures especially suitable for photoengraving. One of the films (Polaroid Professional Pan Type 53) offers a

film-base negative which can be retained and reprocessed in the darkroom for use as a conventional printing negative. Ask your dealer to demonstrate this new system to you. Price of the complete film holder is \$49.95 and the packets retail for \$6.22 and \$7.31 per box of 12.

TURN THE PAGE FOR ADDITIONAL DETAILS

Additional information about the Polaroid[®] Land 4x5 Holder and films

Holder details

The Polaroid 4 x 5 Land Film Holder conforms to A.S.A. specifications for cameras and instruments designed to use 4 x 5 film holders of the lock rib type. It will fit press and view cameras equipped with Graphic, Graflok and similar type backs. The holder, which weighs 24 ounces, is constructed of die-cast aluminum. Built-in stainless steel processing rollers are ball-bearing mounted.

How the system works

Each packet is an individual exposure comprising negative, positive and a developing pod, all contained in a light-tight envelope with a metal cap at one end. These three steps show how the system works:



(1) The packet is inserted into holder, where metal cap is captured. Envelope is then withdrawn to allow the negative to be exposed.



(2) After exposure, the envelope slides back into the holder, where it is recaptured by the metal cap to form again a light-tight enclosure. Processing lever on the holder is then moved to the "process" position, which closes the stainless steel pressure rollers on either side of the envelope.



(3) The entire packet is then withdrawn through the rollers, which apply pressure to the pod of developing reagent and spread the reagent in a uniformly thin layer between positive and negative. Development starts at this point, and after the required development time the packet is pulled apart and the positive print is separated from the negative.

Film types

Two types of film are being offered initially. Both produce sharp grainless black-and-white images. Polaroid Pola Pan Type 52 is a panchromatic high-speed (200 ASA equivalent index for daylight) emulsion yielding prints of long scale and good resolv-

ing power, capable of 2X or more enlargement without noticeable loss of detail. This material is furnished with a paper-base negative which is not intended for reuse. Retail price \$6.22 per box of 12 packets.

Polaroid Professional Pan Type 53 is a panchromatic high-speed film (200 ASA equivalent daylight exposure index) producing prints of broad dynamic range and verhigh resolving power, capable of 3X enlargement or more. This film is furnished with an acetate-base negative which can be reprocessed for use as a conventional printing negative. Retail price \$7.31 per box of 12 packets.

Reclaiming the negative in Type 53 film

The negative is partially developed as it produces the positive image, which is formed from silver carried over from the negative to the positive through the reagent layer. If the negative is to be preserved for use as a conventional negative, development of the remaining silver in the negative must be completed before additional light strikes the negative.

To do this, the print is developed in the usual way in the 4 x 5 film holder, but the positive is removed from the negative in the darkroom-no light must strike the negative. After the positive has been removed, the negative is washed in a Kodalk bath to remove the reagent layer. Then it is redeveloped in a standard developer formula recommended by Polaroid; after which it is fixed, washed, and dried as usual. Full details for handling the negative are included with each box of packets. The negative which results from this processing is of excellent qualityvery high resolving power, long scale. Because of the manner in which the negative is developed initially by the Land process reagent, there is much less overall "fog" level and less tendency to block or wash out at either end of the density range than would be the case if the same negative were developed completely by conventional techniques.

Contrast control of positive

Both film types offer considerable contrast control of the positive print by altering development time. The shorter the development time, the less contrasty the print will be. 45 seconds development at or near room temperature yields moderately low contrast prints. Prolonged development up to two minutes heightens contrast by increasing density in intermediate and dark tones while preserving purity of highlights.

Exposure latitude

The latitude of these materials is similar to that of color, inasmuch as the positive print results from a single exposure. Latitude is approximately one-and-one-half stops either side of optimum exposure, although for many subjects useful and pleasing pictures can be obtained a full two stops either side

of what might be judged to be the optimum exposure. Of course, if the negative in Type 53 is to be retained, additional latitude is obtained through use of the negative which can then be printed through an exposure range of an additional two or three stops, depending on the printing paper used.

Copies and enlargements

The Polaroid Copy Service offers fast, economical service on copies and enlargements of 4 x 5 prints. You can obtain same-size prints, 5 x 7 or 8 x 10 enlargements or 70mm copy negatives by mailing the original print to the Copy Service in Cambridge, Massachusetts.

Applications

In general, the work to be performed will dictate the film type selected. If substantial enlargement, retouching or recomposing of a portion of a picture is required, the Type 53 film will be the film of choice, because it yields a quick positive proof that reveals all of the information that will be in the negative, and the negative can then be used for the remainder of the photographic task.

A number of professional photographers have been using this system for some months in connection with the preliminary evaluation and testing program, and broad usefulness has been found for the system in every phase of professional photography. Several photographers have made it routine practice to salvage the negative and file it for further work, meanwhile using the positive print as the proof print for submission to the client, either in original or photostated form. Then, when the subject matter is approved for final production, the negative is used for the balance of the work.

The Type 52 (paper-base negative) material is ideal for record shots and for illustrating catalogs, brochures, reports, etc., because it lends itself to direct reproduction in the engraving process. Pictures made with it can be enlarged 2X or more right in the engraving camera without noticeable loss of detail. This film type is also of great value for proofing pictures in color photography.

Cost

Although the actual cost per exposure of 4 x 5 pictures in this system is greater than that of a single cut film negative, the savings in the photographer's time and in processing time have been found to be substantial, far more than offsetting in most instances the actual materials cost. Perhaps the greatest cost-saving aspect of this system is its ability to let the photographer know when the result he desires has been achieved, so that he need not take a multiplicity of pictures of each subject in order to be able to select one which best meets his needs. Further, the ability to see the finished black-andwhite image of each exposure as it is made enhances the creative process by showing a final result each time instead of an approximation in the ground glass.

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WIDE ANGLE

Exakta announces continuous focusing with Exakta and the New, remarkable Steinheil Auto-Quinaron Lens

Just imagine...with only one lens...you take pictures at infinity ...and close-ups of the same subject in life size or magnified... by simply moving in closer and closer to the subject while turning the lens!

Terrific isn't it, not to depend on extension tubes or bellows extensions! Virtually no exposure increase and no computations when time is a factor and the work is important.

You'll get the complete subject to fill the entire film frame especially with such small subjects as flowers, insects, coins, stamps, etc. You can even fill the film frame with only part of your subject as the petal of a flower, the head on a coin, etc.

What's more, the Steinheil Auto-Quinaron for Exakta is a 2-in-1 lens because it is both a GENUINE 7-element WIDE ANGLE lens and a CLOSE-UP lens too! It has a fast F2.8 speed and a focal length of 35-mm (62° angle of view). It is ideal for both color and black and white.

Not only does the Auto-Quinaron combine the latest advancements in optical design, but its fully automatic diaphragm mechanism is the most dependable ever designed!

Be sure to see the Steinheil Auto-Quinaron lens for Exakta, today, at your dealer. Price \$149.50, list.



NEW, STEINHEIL F1.9 AUTO-FLASH QUINON 55-MM LENS WITH FLASH CALCULATOR—A NEW AND INVALUABLE FEATURE FOR EXAKTA

The New F1.9 Steinheil Auto-Flash Quinon 55-mm lens with automatic diaphragm is tops of the latest optical creations in the Exakta system of photography.

This newest automatic lens for Exakta features a smart new calculating device which accurately computes and indicates disphragm stops and distance settings for flash pictures! Its excellent correction renders maximum definition and fine contrast. This and its high speed rates the Auto-Flash Quipon outstanding for color and black and white photography.

Exakts Light-Meter IIa Camera with Built-in Electric Exposure Meter & Pents Prism eye-level viewfinder and automatic Split-Image Rangefinder and Direct Optical viewfinder with F1.9 Steinheil Auto-Quinon lens with flash calculator and fully automatic diaphragm: \$429.50, list F1.9 Steinheil Auto-Quinon lens only, without camera\$169.50, list

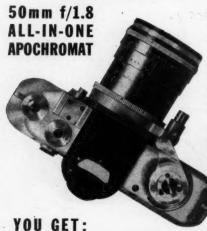


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Bronica 2 1/4 Single-Lens Reflex



The Bronica 21/4 x 2¼ single-lens reflex, with Nik-kor 75mm f/2.8 lens, features a lens, features a fully automatic diaphragm and instant return mir-ror that virtually eliminates image blackout during

blackout during exposure at most shutter speeds. The automatic diaphragm opens to full aperture immediately after the exposure is made and the mirror of the reflex-viewing system returns to its original position at the same instant. The design of the mirror permits using 50mm wide-angle lenses. The camera also has interchangeable film backs, fully automatic film transport, and is constructed of stainless steel, titanium, and aluminum-bronze alloys. Dark slides for the interchangeable backs are said to be foolproof, making accidental film exposures impossible. Also, an interlock system makes exposure impossible unless the dark slide is fully withdrawn. The film transport is designed to take into account the need to advance film and cock shutter even when backs are changed. shutter even when backs are changed.

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35MM

by JOHN WOLBARST

More about that "convertible" developer, Edwal Fine Grain Concentrate #7, and how to use it.

Some months ago I mentioned a remarkable new developer being marketed by Edwal Scientific Products Corp., 420 W. 111 St., Chicago 28, Ill., and promised a more complete report at a later date. Here it is.

The developer is called Edwal FG7. It is a highly concentrated liquid. The design of this developer is such that by diluting it with water to various degrees—ranging from 1:1 to 1:15—it can be employed for a wide variety of purposes. In fact, I have not yet discovered a conventional 35mm or roll film with which it does not combine readily to produce nice results. It is also advertised as being equally suitable for all sheet films, but I have not had the time nor inclination to try it with such films.

It is my opinion that its particular combination of characteristics makes it especially suitable for amateur 35mm use, so I'll concentrate on that aspect.

The background of FG #7

Fine Grain #7 is a further refinement of Edwal Fine Grain Concentrate #2 which first appeared several years ago. (I don't know what happened to FG 3, '4, 5, and 6.) With many films the two formulas are quite alike in their performance. However, FG #2 had a tendency to produce peculiar fogging effects on some of the fast films. FG #7 gets around this entirely—negatives are notably clean and fogfree. Development times for FG #2 listed in my film/developer charts of June 1958 Modern are OK to use with FG #7.

It is my belief that with the very slow and medium slow films FG #7 offers no advantage over FG #2. However, it is very much better than FG #2 for fast films.

The instruction sheet specifies certain uses of FG #7 at dilutions of 1:1, 1:2, and 1:3. At these dilutions it is a vigorous semi-fine grain formula with performance somewhat in the D-76 range, and it is meant to be replenished and re-used. The replenishment rate is ½ oz. of fresh concentrate per roll. It seems to me that in this form it offers no special advantages over other replenishable developers. However, when diluted 1:7 or 1:15 as a one-shot, that's another story.

At 1:7 dilution FG #7 is quite vigorous and is intended for the superspeed films such as Agfa Isopan Record and Kodak Royal-X Pan. At this dilution there does not seem to be any fine grain characteristic. Development times range from 7 to 10 minutes at 70F.

FG #7 impressed me most as a oneshot at 1:15 dilution, at which strength it can be used two ways.

When diluted 1:15 with plain water the fine grain characteristic vanishes. It is now essentially a high-sharpness developer which delivers full film speed with moderate contrast. In this form it is recommended for use with very slow, medium slow, and medium fast general purpose films. It works fine with them, too. Of course, with films like Adox KB-14 or Kodak Panatomic-X I think FG #7 does not do anything that can't be done with several other one-shot developers. But I decided to try it with fast films, and there I was surprised at the results.

High speed, plus definition

It so happens that if I have a choice between extra fine graininess and extra sharp definition in a picture I will always choose the techniques that give better definition. When I developed Ansco Super Hypan in FG #7 diluted 1:15 for 16 minutes at 70F the results were amazing. True, there was graininess visible in a full negative 11 x 14 glossy print. But the images were sharper than anything I had ever been able to produce with a fast film. A couple of years ago I tried developing Kodak Tri-X in Agfa Rodinal, a powerful, highly concentrated one-shot. I got tremendous definition, but also unacceptably high fog and excessive graininess. Not so with the FG #7/ Super Hypan combination. And, in addition, with an exposure index of 500-650 I was consistently getting excellent negatives which printed beautifully on No. 2 (and occasionally No. 3) paper.

I tried the 1:15 dilution with all the fast films for which it is specified in the instructions sheet. The results varied according to the films—some were better than others but in no case were they unsatisfactory. However, for reasons unknown to me FG #7 seemed to do best with Ansco Super Hydan.

I have gone into some detail about this because I consider that the combination of high speed, outstanding definition, moderately low graininess, plus the convenience of one-shot use, makes this a particularly desirable developer/film pair.

(Continued on page 152)

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ANOTHER FINE SYLVANIA PRODUCT

THE WELL TRAVELED CAMERA

by the editors

A flying trip to the Caribbean; what to take; problems of heat and humidity; film choice.

What camera is the best traveler? The answer is as multiple as the cameras that are your favorites. Put it this way: don't travel with a stranger. Make sure the camera is an old friend—that you'll know how it performs and what to expect from it, wherever and whenever you vacation.

Let me tell you about a trip I took to the Caribbean recently—the cameras I took with me, the reasons why I took them, and what I brought home in the way of pictures. We islandhopped from one intriguing spot to another. Puerto Rico, St. Thomas, Trinidad, Tobago, Grenada, Antigua, Martinique were our stopovers.

If you plan to stop at just the British or French islands, you do not need a passport; for the Dutch possessions, you do. Ask your travel agent for specific data on this. At the port (city) where you leave U. S. territory you can fill out a registration form for personal effects (#4455) for any foreign-made equipment which you have with you. (This is not needed for American-made cameras or lenses.) Then you'll have no trouble getting back through U. S. customs.

Naturally weight and space are of terrifying importance when you are traveling by air—and by far the greater number of Caribbean travelers do. However, if I had my choice between taking along an extra seer-sucker jacket or 24 rolls of color film, I'd probably choose the film. (This argument will ultimately be decided by your spouse, but if he or she is a photographer, you'll have little trouble.) My cameras: a 35mm with three lenses, wide-angle, normal and long; a twinlens reflex; a Polaroid Land.

Your eyebrows may now be going up. Why a Polaroid? It's heavy and the film is bulky. This is true, but it is the greatest ice-breaker in the world. We traveled a great deal by car on various small islands. (It's the only way to get around.) I remember one day in a tiny fishing village in Tobago, when we were the only strangers. The atmosphere on the beach where the people were seine fishing for a living was one of hostility. Too many tourists with a "Pose here. I'll

give you a quarter" attitude had offended the pride and dignity of these hard-working people. We began by taking pictures of each other. The curiosity of the villagers overcame their hostility when they saw our instantly finished pictures. We offered to take one of the friendliest old man and give it to him. Suddenly we had more willing models than we could have used. More than that, they were friends. "Ah yes," they would say in their rhythmic voices, "a now-for-now picture. Will you take one of my son?" Then we were able to take out our 35mm's and 2½ reflexes.

We also took along a supply of Polaroid postcarders and as we took the pictures of other tourists staying at the hotels where we were, we gave them the finished prints safely adhered to postcards which they sent home. We sent the same to our family and friends. The Polaroid was also our favorite snapshot camera. At every field where our island-hopping plane stopped, we took pictures of each other and now have a wonderful memoryevoking album of our trip. A tip: hot weather makes the problem of keeping the Polaroid Land camera clean a sticky one, as the developer gets a bit runny. We improvised and used cologne to clean the rollers after each roll was shot. Result: best-smelling and smoothest-working camera in the Caribbean!

35's: light and easy!

The 35mm's were marvelous. Unobtrusive, lightweight, easy to pack. The long lens more than paid for itself when we were after candid shots. You can stand so far away that you can get fine unposed shots without contending with camera shyness. You can also do spectacular landscapes with fine sunsets and get into the heart of a situation without interfering with it. The wide-angle was handy for its superior zone of sharp focus and for including many people in one shot.

We used the 2¼'s mostly for landscapes, portraits and when we knew we would want to blow up a black-andwhite negative to a very large size.

Most of our color shots were taken on Kodachrome because we like its sharpness, brilliant hues and stable processing. But Anscochrome, Ektachrome and Super Anscochrome all

(Continued on page 44)

GRAPHY

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the LARGE CAMERA

by ANDREAS FEININGER

Staff Photographer for Life Magazine

Meet the sturdy Peco Universal II, a new view camera on the market.



Users of both large and small cameras are sure to be interested in a brand new view camera—the Peco Universal II—which was shown to me recently. It has a number of fine features which I

think you should know about.

Made by Plaubel in Frankfurt am Main, West Germany, the Peco is based on the principle of the monorail "optical bench." But unlike many other monorails, which are known to be a bit shaky, the Peco is rigid.

The cost of the Peco 4 x 5 is \$228, and the 5 x 7 sells for \$255. Its American distributor is the Olden Camera & Lens Co., 1265 Broadway, N. Y., N. Y.

Maximum extension between lensboard and film is 19 in., minimum is 3% in. Bellows are interchangeable within seconds by means of two sliding locks, and a special wide-angle bellows is available which permits photographers to use even super wide-angle lenses with angles of view of 110° and greater in conjunction with all the swings.

Both front and rear standards are equipped with a full set of sliding, swinging and tilting adjustments which in extent surpass the covering power of any lens that could be used on the Peco. All these adjustments are exquisitely engineered and equipped with precision-calibrated scales for accurate repeat settings of swings and tilts used. They have the most efficient locking devices I have seen—large, comfortable to operate even with gloves on, and smooth as silk.



Bellows of the Peco extend to 19 in.

Coarse (quick) focusing can be done with the aid of two sliding extension rails, fine focusing by means of two precision rack and pinion drives. Both these movements can be executed independently for either front or rear focusing, or a combination of both. The action is unbelievably smooth without the slightest degree of play.

The spring-loaded ground glass screen is operated by a lever working on an eccentric cam for effortless, jar proof insertion of film holders, an operation so smooth and easy that it can be performed with one hand. Two spirit levels attached to the rear frame of the Peco make horizontal and vertical adjustments a cinch—a real advantage in photographing architecture and interiors. The rear frame itself is square and can be set either for horizontal or vertical pictures.



The Peco folds up for easy carrying.

A serious disadvantage of most monorail cameras for the photographer who is on location is their bulkiness. The cameras must be housed in a big, heavy travel case. But not the Peco. Thanks to its interchangeable bellows design it can be taken apart in seconds simply by unhitching one side of the bellows, folding them flat into the rear frame and fastening them with snaps, after which both front and rear frames can be turned sideways into the plane of the monorail (see illustration). As a result, the Peco when packed for transport is only three inches thick! THE END

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RAPHY

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New Photo Books

THE PICTURE HISTORY OF PHOTOG-RAPHY, by Peter Poliack. 624 page more than 600 pictures, 32 pages color. Harry N. Abrams, Inc. \$17.50

Trot out all those adjectives that are used to describe best sellers, for most of them can be applied to Peter Pollack's massive undertaking The Picture History of Photography. Mr. Pollack, erstwhile Curator of Photography at The Art Institute of Chicago, has attempted to trace the trials and triumphs of photography from its beginnings till today in this large and magnificiently reproduced volume.

In it you will find an expertly chosen collation of much important material that has heretofore existed only in many separate and difficult-to-find books. Fox Talbot, Daguerre, Atget, Stieglitz, Brady, Muybridge—name the name and you will find a chapter of informative, well-written, illustrated material. There are some new items, too, among them a fine portrait of the beardless Abraham Lincoln taken in 1860 by Alexander Hesler.

The fun and flavor of the adolescent years of the camera art are there. Paul Delaroche's "triumphant shriek on first seeing a daguerreotype, 'From today painting is dead!" The grand struggles and excitement of the earlier years when P. H. Emerson dashed from imitations of paintings to straight photography, damning with great vitality whichever side he was not in current sympathy with.

There is an excellent chapter on Edward Steichen. (His great photograph of J. P. Morgan is as fresh and virile today as it was the hour it first emerged from the hypo.) There is a fine delineation of the nature-oriented eye of Ansel Adams, and the reviewer is tempted to end with the old accolade, "This book should be in the library of every photographer." Well, it should be. But that isn't the end of the book, or this review.

Writing critically about the work of current artists in any field and assessing their future importance is a painful and thankless task. However, Mr. Pollack chose to bring his history up to date. And so we must go up to date with him. It is in the area of current photography where his faults as a critic and historian are apparent.

The author has recognized in early chapters the importance of mechanical advances in photography and how these technical advances dictated new subject material, new types of pho-

(Continued on page 36)

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(Continued from page 34)

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tographs, new esthetics. Yet, when he comes to the modern era, he all but ignores the fantastic import of the miniature camera, and never discusses the tremendous influence of electronic flash. A chapter (and rightly so) is devoted to the contribution of picture editor Roy Stryker to photography; one photograph only is given to the inventor of electronic flash, Dr. Harold Edgerton.

Mr. Pollack obviously is oriented toward the photojournalist and toward the fresh vision of the Siskind-Callahan group of photographers. That's fine. But no work on current photography is conclusive without some sort of analysis of the significant contribution of the commercial-studio-fashion photographer. Can a book on today's photography be complete without mention of Richard Avedon? With only one picture by Irving Penn? I doubt it. Their influence has changed the taste of the American public, even that of art directors and the photojournalists.

It seems to me that even the section on photojournalists is incomplete. Salomon was an important pioneer, so is the ignored Martin Munkacsi. If Mr. Pollack feels that Ed van der Elsken's work is worth a chapter, that is his privilege. (I don't.) However, where, oh where is the critique of W. Eugene Smith's not inconsiderable contributions? Can one have a chapter on Karsh and not so much as a single portrait from Halsman? Can one choose from Georgy Kepes' photographs but nothing from the great scientific work of Dr. Roman Vishniac and Julius Weber?

Granted that cost factors may have narrowed the choice of illustrations for the color chapter to existing plates, let us still say that the selection is unfortunate. Great color photographs have been printed. But there is a lack of taste and discrimination in the choice of pictures and a fumbling feeling in the text which leads me to believe that color is one area to which Mr. Pollack did not devote much thinking time.

In short, Mr. Pollack has done a superior job on those people whose work has been assessed by previous writers. He has contributed some exciting new material on photographers from the past, but he stubbed his toe when he entered today's photographic scene.-J. B.

ONCE UPON A CITY, New York from 1890 to 1910 as photographed by Byron and described by Grace M. Mayer. 511 pages, profusely illustrated. The Mac-milian Co. 315

There is great importance in the commonplace. But suppose you or I were to grab our cameras and march down to the neighborhood grocery

(Continued on page 40)

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NEW PHOTO BOOKS

(Continued from page 36)

store and begin to shoot pictures. We were not out to produce a masterpiece of cabbage arrangement or a document of the cat who lives in the grocery store. Instead we just shoot the whole store so it would be sharp and clear. Dull you say? Probably, right now. But what a magnificent document when examined in the year 2000!

There have been, to my knowledge, only two photographers of the past with this particular forward vision. Between 1898 and the 1920's, Eugene Atget photographed Paris—the streets, the alleys and the people. For his pains, he was ignored and completely forgotten. Only through the efforts of his latter-day champions, such as Berenice

IN NEXT MONTH'S MODERN

Don't miss June's jam-packed 35mm issue!

Abbott, have his photographs been unearthed, shown and appreciated. No amount of words could possibly take the place of his wonderfully descriptive pictures.

Add the names Joseph and Percy C. Byron (father and son) to that of Through the persistence of Grace Mayer, Curator of Prints at the Museum of the City of New York, we now have a really magnificent collection of the Byrons' prodigious work. This is the New York of sixty years ago, from the fantastic Roman-styled soda fountain at Hegeman's drug store to pugilist Bob Fitzsimmons being examined at a dermatological institute. There are over 200 photographs selected from 10,000 prints and negatives in the museum's collection. Famous streets, theatrical personalities, clubs, hotels, and ordinary people working and playing give you a complete graphic account of life sixty years ago.

The Byrons were hardly artists. From the photographs, you learn that they were expert documentors of people and places. They knew precisely how to take sharp clear photographs, either indoors or outdoors, which would show the utmost detail. And in an age without fast films or flashbulbs, their success was fantastic.

Grace Mayer has provided an exceptionally lucid, interesting text contributing additional material about the Byrons and the times in which they photographed.

Alas, the reproductions of the photographs, in sepia, are not up to what the Byrons should have been accorded. Nevertheless, the book is well worth owning.—H. K.

These and other books are available through AMPHOTO; see pages 160 & 161.



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What's Ahead?

by LLOYD E. VARDEN

Suggestions for the storage of color films. It will pay you to take heed.



A photographer friend of mine recently returned from Central America after a six-month picture-taking campaign. He made all of his shots on color film and waited until he returned to the U.S. before hav-

ing them processed. The results were not just disappointing. They were useless!

He had obviously held his films too long under tropical conditions of high heat and humidity. In his case it would have been next to impossible to follow the advice of the manufacturers on proper storage of color films. Refrigerators in the interior of Central America are non-existent. But he should have mailed his exposed rolls for processing immediately, whenever possible.

Ansco storage recommendations

In the most recent issue of the Ansconian some useful recommendations are given for the storage of color films. One does not have to travel to the tropics to encounter conditions of high temperature and high humidity. In this country such conditions are commonplace. But nearly everyone has refrigeration facilities and can do something about unfavorable weather situations.

It is fairly well known that all photosensitive materials used by amateur photographers are affected by their environment before they are exposed and processed. Color materials are particularly perishable because of their complex emulsion structure, involving three emulsion layers that must remain constant in their speed and contrast relationships.

All color materials require storage under cool, dry conditions if they are to maintain their optimum characteristics over a prolonged period of time. Before loading a color film in a camera high relative humidity is no longer a serious problem because manufacturers package color products in moisture-proof foil pouches of one type or another. But once the seal is broken the film is no longer protected.

High temperature conditions can be damaging, though, even to a color film in an unbroken container. Ansco, according to the Ansconian report, warehouses all of its color materials at 50°F and shipments being transported for long distances are moved in refrigerated cars. I am sure that other manufacturers follow similar practices.

On a dealer's shelf at, say, 70°F color films remain in satisfactory balance for a relatively short time, perhaps three or four months. It would be better if they were kept at 50°F or even 0°F when in the original, unopened containers. Films stored at quite low temperatures should be kept at room temperature for several hours before the hermetic seal is broken, otherwise moisture condensation may occur on the emulsion surface.

The user can certainly get in the habit of putting unopened color films in his refrigerator (normally about 35° to 45°F) until he is ready to expose them. Processing the films as soon as possible after exposure will prevent any further changes due to unfavorable environmental conditions.

But look how many times amateurs keep color film in the glove compartment or the rear deck of their automobiles so it will be handy when they see a good picture possibility. Sometimes a roll of color film will be kept in the camera for several weeks, or even months, before all of the exposures are completed. This is a sure way to get inconsistent results.

Less common storage problems

Ansco points out several less common causes for spoiling color film during storage, most of which the amateur will rarely have to worry about. For example, films kept near X-ray machines or radioactive isotopes can be ruined even before they are opened. Once the seal is broken, certain gases, solvent and other chemical vapors can reach the emulsion to affect its properties.

E

I recommend that you place opened films, exposed or not, in jars that can be tightly sealed to protect them from atmospheric influences. The jars can be stored in a refrigerator until the films can either be exposed, or processed, if already exposed.—THE END

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TRAVEL

(Continued from page 31)

had an important use for us in both 120 and 35mm sizes beyond their obvious advantage of additional speed. Because these films have a greater latitude than Kodachrome they are a better choice for contrasty light. We took our exposure readings for the highlights in such cases, and still retained some shadow detail.

A word of caution about the processing of these three films: make sure about your processor. Test him on a roll or two of film.

In exposing for all our color we always bracketed. Using a reflected light meter we would read for the highlights. If the reading was for f/4, we shot at f/4, f/3.5 and f/5.6. If we were on a bright beach or shooting on sunlit water we would shoot at f/4, f/5.6, f/6.3. Reason: there's more light bouncing around than you think or than the meter picks up.

Bright light: slow film

We took along very few rolls of high speed black-and-white film. You don't need it in those bright light climates unless you are shooting indoors or at night. Whatever you do, don't be the odd-ball who shoots everything with one film and that of the high speed class! If you are going to some of the smaller islands, take an oversupply of film. In Puerto Rico, St. Thomas, or Havana you will have little difficulty in getting film. However, on Martinique or Grenada you may dash into the one local supply house just as they have run out of your favorite

About film care: All our 35mm came in cartridges and cans. We kept the 120 film wrapped in aluminum foil after exposure to protect it against the deleterious effects of heat and humidity. We always loaded cameras in the shade and sometimes under a towel. The aluminum foil was also handy when crinkled up as a reflector.

Film care

For our daily excursions we usually took with us just enough film for the day, kept it in the shade, and kept the rest in the temperate clime of the hotel room. I don't have to tell you not to put films in the glove compartment, do I? You know by now that glove compartments are veritable torture chambers for film, exposed or not.

I've learned several lessons from last year's trip which I am applying to this year's. We're taking along a lightweight collapsible tripod. (Those dusk shots in color would have been a bit sharper with a sturdier foundation under the camera. So would the 300mm long lens pictures.)

I'm also dropping an ultraminiature into my pocket for record shots this year. This is for those happy moments when I have left the camera back at the hotel and the greatest face since

(Continued on page 98)

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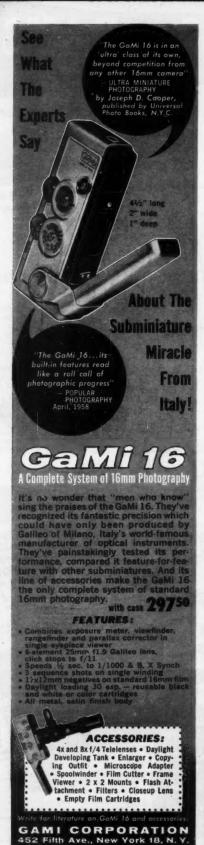


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ULTRA

by JOSEPH D. COOPER

New German ultraminiature now available in the United States.



The Mec-16 is now on the American market. Described in Modern's Photokina reports, its 4-element, 20mm f/2.8 lens produces 10 x 14mm pictures on double-perforated 16mm film. A metal focal-

plane shutter has speeds of 1/30 to 1/1000 and B.

On first glance, the Mec-16 seems larger than most other 16mm still cameras. It measures $3\% \times 2 \times 1\%$ in. (For comparison, the Minolta-16 is $3\% \times 1\% \times 1\%$ in.) Both the Mamiya Super-16 and the Ricoh Golden-16 are nearer the size of the smaller camera.

When I discussed size with the manufacturer at the Photokina, he argued that with the viewfinder pulled out the total length of the Mec-16 is 5 in., giving it the stability of a compact 35mm camera. This argument should not be passed over lightly. One hazard of ultra-miniature shooting is the lack of a comfortable hand-hold.

To open the camera, you pull out the viewfinder, exposing a button catch. If you press this, the entire inner workings of the camera are released and can be lifted out of the case. To close the camera, hook the lid over a catch on one end and snap it shut over the other.

Loading film is quite easy. Insert about 1 in. of film into the slot of the take-up cassette. Then the two cassettes are dropped into place while the film is inserted between a pressure plate and the camera body.

A quick transport lever advances the film into the take-up cassette, aided by two sprocket teeth which engage the film perforations. Double exposures cannot be made since the film transport lever will not advance when the shutter is cocked.

The camera is made ready for action by pulling out the optical viewfinder, shown extended in the accompanying picture. Opening the viewfinder unlocks the shutter release. The rapid advance lever transports the film and cocks the shutter in one quick motion. When not in use, the lever folds in close to the camera. Parallax marks for close-ups are printed on the view-finder lens.

The shutter synchronizes at 1/30 sec. for all flash bulbs and at 1/60 sec. for electronic flash. A tripod bushing accepts flash brackets.

A 20mm focal length affords very great depth of field. Using the diagonal of a 10 x 14mm image as a guide, a "normal" lens would be about 17mm. The other cameras mentioned above have 3-element 25mm lenses. Use of the central portion of the optical image contributes to sharpness with this focal length.

Since the camera lens has a great depth of field, the manufacturer has provided a "universal" setting. The



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Mec-16

settings are engraved in green: 1/5.6, 1/60 sec. and a distance setting of "S" which keeps everything from 5 ft. to infinity in focus at the given aperture. These settings are based on use with the relatively slow 'Adox KB-14 supplied for the camera. Color film is Anscochrome EI 32 daylight.

Other notes: With carrying chain, the camera will sell at a list price of \$64.50. A leather carrying case will sell for \$4.50. There will eventually be seven filters which can be dropped into a body slot to cover the deeply recessed lens which requires no lens hood. All controls are on the face of the camera; rim-set dials for lens aperture, distance and shutter speed have click stops. Camera finish is gold and black. Importer and distributor: Standard Camera Corporation, 319 Fifth Ave., N. Y.—THE END

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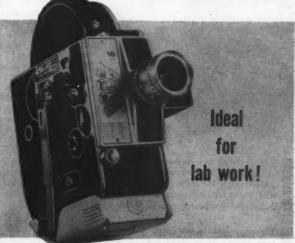
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the CAMERA CLUBS

by MABEL SCACHERI

Advice on the care and feeding of camera club guests. Choose a monthly project with an unusual theme to spark new enthusiasm.



One of these days I may come down with a bad case of split personality because of a new game of mine. Instead of attending a camera club meeting in my true role of chronic kibitzer and old friend of

the club, I try to see and hear the session as a timid newcomer who is visiting the camera club for the first time. I, Newcomer, slip in stealthily and pick a seat in the back row. Everyone is chattering, nobody even sees me.

A guy pounds on a table for attention, everybody keeps chattering in a slightly lower tone, and the table-pounder drowns out this babble by reading from his notes: "Last field trip a great success but what became of Tim? (laughter from members).... Joe Longshot has prints in 25 salons... Ten members have not paid their dues."

All this is a real letter from home for the members and for me, the old-timer. But it bores me as Newcomer, and makes me feel very much the outsider. The club president drones on, reads a letter from ex-member Jim Coldfoot who has moved to Florida, says Charlie Colornut has an enlarger for sale, and stops abruptly. The judge has finally arrived. And he's only 45 minutes late.

Judge bewilders newcomer

I, Newcomer, can hardly see the prints from my rear seat. I came to peer into the mystery of how pictures are evaluated by the great pundit, but all I hear is "In, Out, Hold. . . . Print quality bad, but still. . . . I guess I always go for sailboat shots. . . . Oh, I dunno, I just don't like it." Some pundit. huh?

As the old-timer I know the members will crowd around the judge after the meeting breaks up and in conversation he will offer them worthwhile criticism on their pictures. He is just audience-shy. But I, Newcomer, have had it. I get up after ten minutes of argle-bargle from the judge and drift out with nobody even noticing.

Of course. Newcomer's depressing experience would not happen at your club. You know a club must have new members to keep on flourishing, so you have proper plans for welcoming guests. You get their names and addresses, and introduce them to the club during a break in the program.

Your club might be the Capitol Camera Club of Austin, Texas. Mrs. Jesse Fox, who edits the club bulletin titled "Shutter Mutters," sent me a nice grist of these bulletins. I notice that last year they made September their guest month. Each member was told to bring a guest—preferably a prospective member.

I can tell a lot about the general health of a club just by scanning the bulletins. This Capitol Club has some good program ideas. Each month there is an assigned subject such as ceramics, church windows, old Austin homes, hands, available light after dark, and a picture story told in from three to six shots.

With great foresight the bulletin offers advice to program chairmen about how to put on a slide program. The club advises organizing the slides in a time sequence, alternating close-ups with long shots, varying angles, showing some familiar scenes, photographing the photographer—anything to add variety to the usua' slide show.

Pepping up print quality

The Convair Camera Club of Pomona, Cal., found a good way to pep up the members' print quality. They called it a "Match the Master" stunt. A first-rate photographer supplied identical negatives to each member of the club. Each was to make a print, and see how well it stacked up beside the print made by the said first-rate photographer.

The Municipal Photo Club of St. Paul reports that the red tams the members wear on field trips are excellent attention-getters. It must convince non-member shutterbugs that here is a happy group really interested in photography without getting too heavy about it.

One final thing impresses me about all the bulletins I have been reading. They get so many ads from local merchants—not only camera stores but flower shops, rug cleaners, travel bureaus and restaurants. Club bulletins in the New York area don't show any enterprise in helping out club finances. I wonder what's the matter with us anyway?—THE END

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AMODERN LOOKAT CHILDREN

How best do you photograph a child? Follow him around unobtrusively and shoot by existing light with a small camera? Place her under electronic flash or floods? Try to capture the romantic mood we all connect with childhood? Modern believes there isn't one absolute way to photograph children—sometimes the child dictates the style. At other times you try to please a parent who may have an unrealistic conception of the child. Often, we hope, you shoot to please yourself. Which way is right? We decided to analyze the work and techniques of three photographers known for their pictures of children. Josef Schneider generally uses the commercial, studio-lit approach, Rae Russel Gescheidt shoots the natural documentary pictures, and Tana Hoban portrays the romantic mood. They differ in concepts, approaches, equipment. The final results of each are certainly distinctive. Rather than unrealistically dictate the ultimate direction of child photography, we'd like to let you examine these three divergent directions and then choose your own way, which is, we think, the Modern way of handling it.—The editors



JOSEF SCHNEIDER

"MY ONE INTENTION is to shoot photographs that glamorize the child," says Josef A. Schneider, one of the most successful child photographers in the United States. Everything he works with-lighting, background, props, cameras-fit into a pattern designed to produce pictures that parents and advertising clients want to see. Schneider may have a vague feeling that he's going against the trend-unposed impressions shot by available light—but he pays scant attention to it. He's much too busy keeping up with his appointment book. Schneider's lighting technique hasn't varied much over the years-"Three lights are enough to cope with just about any situation," he states. Whether Schneider is photographing a suburban youngster in his New York studio or is in Sweden to shoot portraits of the royal family, the approach remains the same. In the short time spent in making a portrait of a child he knocks himself out to get the reaction he's after—the one that fits a preconceived idea of how the picture should look.

-м. а. м.





Simulated living room scene (above) actually occupied platform in middle of Schneider's studio. Two floods were used to give feeling of ordinary room light; one overhead, one in front.

Studio bathtub scene (left) required three-light set-up (see next two pages) for even lighting. Lighting is flexible enough to accommodate active youngster. Spots won't do at this age—since light coverage is small and child won't stay put. Schneider rarely lights background.

Candid effect portrait (opposite page) resulted from two lights and a combination of psychology and patience. Backlight was placed high and to the left of child. Front light about the same height. Long cable release with bulb resting on the floor allows foot to trip shutter.

In Josef Schneider's studio

almost everything is

standardized—except the

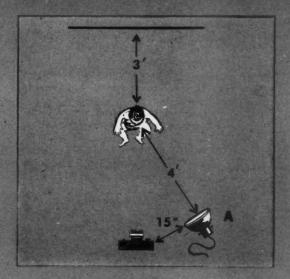
baby. He makes the picture.

APPROACH: We watched Schneider work with one child—and it provided more information on how he gets his pictures than a thousand word conversation. He started out by chucking the child under the chin—lightly, but fast enough to make it seem like a game. The baby's eyes lit up and she began to laugh. Then, he took her hands and placed them on each side of her face several times—the last time he left them there. It became a wonderful pose—just right for the face and personality of this little girl. When Schneider plays with a child or hands it a toy, he is attempting to motivate a reaction. He may hit the child on the cheek, move her hand to hit him, repeat the game, and press the bulb.

ONE LIGHT SET-UP: Although the diagram at the right shows the light in one position only, it can be varied to provide different effects. Using the arrangements shown, with the light above the child, shadows will be off to the side and below the shoulder level. Light should be about 12 in. above the eyes. Placing the youngster on a white blanket that reflects light helps to fill shadows. Keeping the baby ebout three ft. from the background prevents shadows on the wall and also lights the area around his head. You can lower, raise,



lights the area around his head. You can lower, raise, or move the lamp to the side for other treatments. Chubby youngsters look hetter with slight shadow on the side of the face away from the light. Verichrome Pan or Plus-X exposure is about 1/11 at 1/50 sec. Lamp height emphasizes or plays down unusual facial characteristics of child.



USING TWO LIGHTS: Adding another light to the one we already have in position brightens the hair, face and body of the youngster. It also edge-lights his head. The light goes behind the child, on a diagonal with the first light. While the backlight is really effective with bleade children, even dark haired youngsters show interesting highlights. Feathering, or just allowing the edge of the beam to strike the child's face, is a most effective way to use the backlight. You can vary the backlight to either size of the child, choosing the arrange-



backlight to either the of the child, choosing the arrangement that provides the most interesting effect. Beware of the light that streaks harshiy across a cheek. This offen happens when baby decides to lift his head a bit too high. Exposure is still about 1/11 at 1/50 sec., since main, or front light determines exposure for subject.



EQUIPMENT: Some of the most important equipment in Josef Schneider's studio are the toys that line shelves on one side of the room. They often "make the picture." Photographs are shot with either a Hasselblad or Mamiyaflex Professional C, although a Graflex 5 x 7 view occasionally sees service. He uses a 135mm lens that makes it possible to place the camera a good distance from the subject—and still get a large enough image on the negative. A 10 ft. Kagra cable release (bubble type) and a motor drive that advances the film in his tripod-mounted Hasselblad allows tripping the shutter from almost any part of the studio—or from right next to the subject.

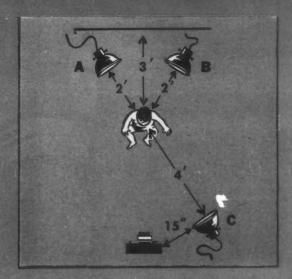
LIGHTING: Schneider tailors his lighting, camera, and other techniques to produce a normal negative every time. While he uses electronic flash, he feels that his lighting set-up can be easily duplicated with photo floods. Most of his pictures are made with three direct lights—but one or two lights may be used if the occasion and subject demands it (see below). All negatives are developed in a variation of D-23—five grams of Elon, 100 grams of Sodium Sulphite and enough water to make a quart of stock solution. Practically everything is printed on normal paper—with perhaps minor dodging or burning in. He respects variable contrast papers, but feels he doesn't need the latitude they offer.

A THIRD FOR EDGE LIGHTING: Why three lights? Well, Schneider feels that the third light adds a feeling of dimension to the portrait and peps-up skin tones. However, the third light must not be as strong as the second. If the second light is 18 in. above the baby, position the third light about two feet higher than the subject. Exposure incidentally, remains the same. The front light still is the strongest light and thus determines f-number and shutter speed.

It's a good idea when work-



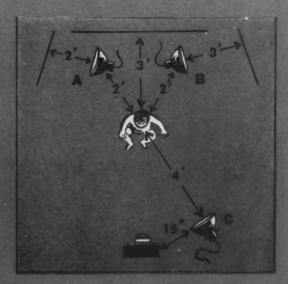
f-number and shutter speed. It's a good idea when working with lights to use a lens shade. Schneider rarely lights background for black-andwhite; also, he thinks white or black backdrops are best. Baby has certain freedom of movement with three light setup—which takes pressure off subject as well as the photographer. Note that main light position remains the same for all three setups.



BOUNCING THE THREE LIGHT SET-UP: Direct floods can be annoying to some children. If you've got a youngster who refuses to sit still, bouncing the light then might help. The same three-light arrangement is used, but the two backlights are aimed at screens or nearby walls to spill diffused light over the subject. A projection screen makes a good reflector. The third light can be aimed at the coiling. If you want to go a



step further, you can tape some aluminum foil to the ceiling to act as a slightly more efficient reflector-diffuser. Bounce lighting provides much softer feeling to photograph—almost that of soft daylight coming through a window. There are no great contrasts between highlights and shadows. Careful meter reading should be taken for highlights and shadows with bounce light.







Lad leaves for camp, opp., with wistful expression, tender grasp of mother's hand. Documentary at its best.

Suburban New York school children riot about in bus but do not escape Rae Russel's Nikon, 50mm lens. Tri-X was exposed at f/4 and 1/60, adequate to stop action though bus was moving.

A fleeting moment, below, was extracted from schoolroom milieu. Angle, framing combine to show rare feeling.

RAE RUSSEL

THE DOCUMENTARY APPROACH: Rae Russel, really Rae Russel Gescheidt (and capable spouse of capable New York photographer Al Gescheidt) has an entirely different approach to child photography. Delivered from the brilliant umbrella of studio lights, Miss Russel (and/or Mrs. Gescheidt) makes her environment her studio and existing light her illumination whenever she goes on a job. A classroom is a studio, as is a bus terminal, sick child's bedroom, or modern dance instruction hall on a Saturday morning. Whatever is there, she photographs—without the help of props and bubble gum to tantalize and captivate the young.

The secret? Discretion, love and, perhaps somehow, an iron hand in a kid glove. "I tell them to forget the camera," she says, "to pretend that it and I are not even there. It doesn't take long and so far, I've never been troubled by mugging, show-off youngsters."

Whereas many child photographers set out to photograph a specific child, to flip a kind of magic switch that releases a specific reaction and polished glow, Rae Russel's is a documentary approach. The children are important, of course, but not as portrait studies in front of the camera. They are children in context with



Rae Russel documents those moments that reveal a child's moods and express his daily life.

their surroundings and each other—in front of a photographer who is busy seeing, waiting for those "moments." They don't come parade for her. Rather, she goes to them.

She rides their suburban school busses where she can make a "story." Her child pictures aren't single shots, but usually are related events that tell a story in a visual way.

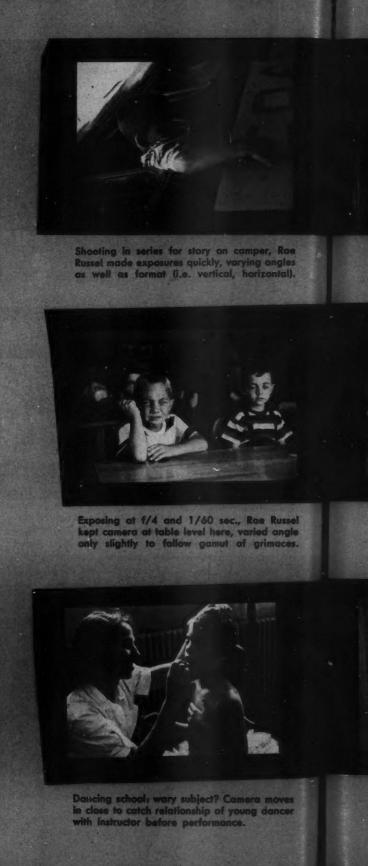
Knowing children is undoubtedly an important factor in making successful child pictures. We watched Rae heave her own 8-month wonder around her living room, laugh with him, converse with him. There was no condescension; the young bruiser, Andy, was not patronized. It was clear why his mother has been so successful with other children. The intent is not to immortalize or to romanticize her subjects, but to show them as they are, going about their daily business of school or picnics or cooky baking. Hardly an intruder in their private world, she is a participant. And the sense of participation is unquestionably a touchstone.

Equipment

Obviously Rae Russel couldn't participate to any extent-i.e., follow action and activities-if she had to chase them with an 11 x 14 view camera. She attempts to become invisible (if that's not impossible) and even the twin-lens reflex with which she started to work some years ago is less maneuverable than her present camera, a 35mm Nikon. In the main, she uses just one lens, too, of normal focal length (50mm Nikkor). More consistency: she almost always uses Tri-X film developed by time and temperature. It's fast enough (she rates it at 300) to permit sufficiently fast shutter speeds, generally 1/60 and 1/100, to catch expressions and moderate action indoors. And for the intimacy which comes by throwing backgrounds out of focus, she frequently uses a fairly wide aperture (f/4) for focusing on a subject which is fairly near the camera.

The documentary is a personal approach; yet, an objective one. How do you like it?

—р. ј.







Close-up, boy's face changes (compare page 58). Focused on nearby subject, wide aperture lets background go fuzzy.

Change of camera to subject distance: photographer backed up to include additional story-telling element—boy's waving mather.





Available, slightly diffused frontlight fell off enough behind boys so that classroom background darkened, didn't compete.

Decline of the scowl—and camera moves slightly to bring more of details of school-mates into relationship with fretful boy.







Off-beat moment comes at costume-changing time. Pupil, nervous before performance, was reassured by friend.

Before the curtain: spirits are boosted! Rae Russel gives continuity to shots, moves from mood to mood with her young subjects.



TANA HOBAN

ALTHOUGH TANA HOBAN DOES general magazine photography and operates a successful commercial studio with her husband Ed Gallob, she is best known for her romantic, idealized pictures of children. She started in photography shortly after she finished art school in the late 1930's, and has been working for national magazines and for national advertising accounts since the early 1940's.

These photographs are not posed in the conventional sense. The subjects were not instructed to watch the birdie or to pronounce "cheese." But the situations were set-up, the locations selected, the clothing and props planned in advance. Miss Hoban placed the children in a specific place: a room, a chair, a tree. Then she waited for the moment.

Children, as photographed by Hoban, seem dreamy and nostalgic. In her own words, "I try to photograph their relationships not to the external but to their own interior world." To create this mood, and to evoke this attitude in the child, Miss Hoban may talk to the child or play with him. The shooting session may last all day—or a few hours. In any event, no matter what the stresses and strains, Miss Hoban remains unruffled. This, she feels, is essential if the child is to remain relaxed and at ease.—P. C.





Portrait (above) was made in ordinary living room. Direct sunlight coming through window creates interesting background, as well as highlighting child's hair. Nearby wall acts as a natural reflector. Rolleiflex, 1/50, f/4.

The location's the same at left as above; model, camera and angle are different. $3 \frac{1}{4} \times 4 \frac{1}{4}$ Graftex, 120 roll film back, $6 \frac{1}{2}$ -in Cooke lens, 1/50, f/2.5.

Leaves are often used as props by Miss Hoban, as in portrait (opposite page). Notice that part of the little girl's face is concealed by her sleeve and that she, like other Hoban subjects, shows little camera consciousness. 3 ½ x 4 ½ Graflex, 6 ½-in. Cooke lens, 1/50, f/2.5.



"Where you focus," says Tana Hoban, "depends on what you want to emphasize." Selective focus is probably her most characteristic technique and dictates her frequent use of extremely wide apertures. The photograph of child and tree at the right was made with a 120 roll film back on a 3 ½ x 4 ½ Graflex camero. The lens (a 6 ½-in. f/2.5 Cooke) was open to about f/3.5. Miss Hoban finds objects held close to the lens so that they are completely out of focus useful in creating soft focus effects. See leaves on page 62 and Christmas tree lights above.

PROPS: AUTHENTIC OR CONTRIVED? Props are selected to contribute to the total mood or effect of the specific picture. Sometimes children bring their own toys (such as the doll at left) and Miss Hoban works with them. More often, she employs toys, clothes, and other objects which she has collected herself. She is constantly on the lookout for props; and buys for future unscheduled use any clothes, fabrics, or toys which she feels might be useful. Leaves and flowers often figure prominently in her pictures; these she keeps in abundance in her house and studio.



No one technique provides
the answer—Tana Hoban
alters approach and equipment to fit the job at hand.

APPROACH: There is no one single attitude or technique which completely explains Tana Hoban's success. Her effectiveness is the result of a combination of factors: casting, cameras, printing, focus, props, lighting, and various special shooting techniques. Several of these are discussed and illustrated *above*; others are considered at *right*.

Basic to Miss Hoban's method is the fact that she genuinely likes children. "I don't talk down to them, I don't patronize them. And I try, under all circumstances to have unlimited patience."

Many children don't react well to direct orders. "And I don't really expect them to. I may know very well in advance that if I ask a child to move to the right or to the left that he won't do it. But he may do something else instead—and I have my photograph."



PRINTS: IS FULL TONAL RANGE NEEDED? High key print as at left can emphasize delicate mood. Dramatic, contrasty printing would destroy the emotional effect. Other than the frequent use of softer-than-normal paper for softer-than-usual effects there are no unusual techniques employed. Miss Hoban prints on illustrators Special E or on Varigam. Usually a minimum of dodging and burning in is required, since Tana arranges lights carefully before shooting, works for soft focus effects in the camera rather than with the enlarger.

CASTING: MUST MODELS BE PROS? The majority of the children appearing in Tana Hoban's photographs are not professional models. The child at right, a typical Hoban subject, is the daughter of a friend. All others on these pages were brought to her by their parents to be photographed. Despite the fact that there is a constant stream of people coming to her studio with suggested models, Miss Hoban is always on the lookout for new talent. She doesn't hesitate to stop adults accompanying a likely child on the street, introduce herself, and arrange an interview on the spot for a shooting session.



EQUIPMENT: In terms of size, Tana Hoban's equipment runs the full range from 8×10 to $2\frac{1}{4} \times 2\frac{1}{4}$. All of the cameras she uses have ground glass viewing systems. She works with an 8×10 Deardorff with 8×10 and 5×7 backs; 4×5 Kodak View; $3\frac{1}{4} \times 4\frac{1}{4}$ Graflex; Hasselblad; and Rolleiflex.

For portrait work she very often uses the Graflex with either cut film or a 120 roll film back. On this camera she usually uses long lenses—a 6½-in. Cooke and a 12-in. Cooke—at wide apertures.

Some of the characteristics valued by Miss Hoban in an objective are quite different from those demanded by the sharp-as-a-tack school. Many photographers would reject the Cooke lenses as uncorrected for astigmatism and flare; but these aberrations helped produce the romantic images appearing on these pages.

LIGHTING: The primary characteristic of Tana Hoban's lighting is that it is always "believable." Whether the light source is the sun, a window or a 6,000 wattsecond electronic flash set-up, illumination seems natural and suitable to the subject at hand.

Miss Hoban prefers to keep lighting arrangements simple. When possible, she shoots by available light; she often boosts the existing light level with No. 2 or No. 4 photofloods or with electronic flash. In the studio she has a custom-built 6,000 watt-second unit and a Skylight 20 unit of 1,000 watt seconds. In addition she uses a 200 watt-second portable Ascorlight unit and a 500 series Ascorlight on location.

Since back-light is a favorite kind of illumination, Tana finds reflectors invaluable. In window light photograph *top page 63*, a wall acts as reflector.

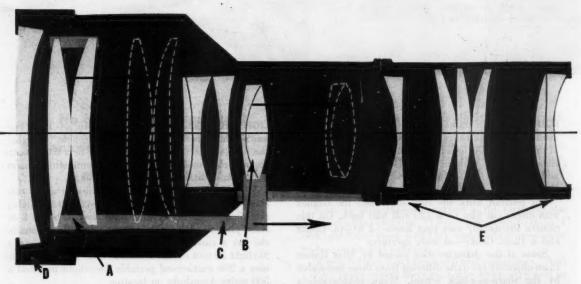
ZOOM FOR YOUR 35MM

Imagine, an f/2.8 lens for 35mm reflex cameras which zooms continuously from 36 to 82mm! It's here now. MODERN gives you the inside story on its efficiency and limitations, how it works and what it can doby Herbert Keppler and Bennett Sherman

THE MOST sensational new development within years in the field of 35mm photography is easily the new zoom Voigtlander Zoomar lens for reflex cameras. In terms of picture taking situations and future developments in the field of still camera optics, the zoom lens is actually hard to overestimate.

First, there's the new lens itself and how it tests in actual use (you'll find a full "Modern Test" on it on page 91. We advise you to read the test first). Then there's the zoom principal itself, how it can affect photography, what its advantages and disadvantages are and what we can look forward to in the zoom lens.

Let's start out first with the zoom lens in the hands of you, the photographer. The one lens covers a moderate range. The shortest focal length is 36mm, approximately the same focal length as the most universally used wide-angle lenses. The zoom sweeps upwards through the 45, 50, 58mm range of today's standard normal lenses, to a full length of 82mm where it will prove extremely useful for portraiture, to name only one field. Obviously, its first use that comes to mind will be in approximating the various focal length lenses you have actually employed in the



Voigtlander Zoomar contains 14-elements with two groups moving together. Front moving lenses (A) and rear moving lenses (B) are connected and operated by zoom arm (C). Forward position, as shown, depicts lens at 82mm.

Rear position, shown by dotted lines, indicates 36mm focal length. You focus the lens by turning the threaded ring (D) which shifts front element. Rearmost lens group (E) forms image on film plane.

past. Accordingly, you may be lead into the habit of setting the lens for a specific focal length and then going after the picture. Actually, the zoom offers you possibilities which border slightly on the fantastic. Instead of thinking of the lens in terms of set focal lengths, you can view your subject through the lens without recourse to the actual settings. Now if you use the zoom as an actual creative tool, stopping at whatever point gives you the effect you want, you'll begin to see how the zoom lens can free you from the very static approach that is unavoidably and subconsciously assumed by the photographer using non-zoom lenses. It will be only a matter of time until you cease even to think in terms of focal length setting.

The zoom principal will allow you to take real advantage of the depth of field, to follow a subject, keeping him or it at exactly the size you wish on the negative, shooting whenever you please. No longer need you be so dependent on exact camera-to-subject distance. The lens, to a point, will take care of the relationship for you (see pictures, page 68).

We would hesitate to say that within a few years the zoom lens will replace all standard focal length lenses. The scope of focal lengths covered in one zoom lens may always be a limiting factor. Also, the lens will undoubtedly remain fairly bulky for some time.

For a more critical evaluation of the zoom lens principal in general and the Voigtlander Zoomar in particular, Modern requested Bennett Sherman, a leading optical expert, (see page 14) to take a good look at the lens. Here is his report:

We had a chance to look at the optical diagram of the new Zoomar f/2.8 lens for 35mm miniature cam-

HERE'S HOW MUCH IT ZOOMS:

These six pictures by Dan Budnick of his wife, Toby, made from a set camera position give you a fair idea of the relative focal-lengths covered by the Voigtlander Zoomar. Indoors, it's obviously ideal for portraits and semi-full length shots.



36MM



ADMINE



50MM



COMP



70MIM



82MM

eras. It's impressive in many ways. To one familiar with some previous Zoomar designs, the newest has some outstanding differences, both in design and performance. First, the front element is a single negative and the first moving group consists of two positive lenses (see illustration, page 66). The fixed negative is now a triple lens, and the rear moving unit is a cemented doublet.

The biggest change is in the rear imaging section. It no longer resembles a conventional camera lens, but looks something like an advanced flat-field eyepiece. All of this adds up to a big improvement in the image quality and performance. Focusing is accomplished by moving the front element. A small shift yields a range from infinity down to less than 5 ft.

The advent of the rare earth glasses and large electronic computers have, according to Dr. Frank G. Back, head of the Zoomar Corportation, made these new designs practically achieveable.

If we look back to the beginning of zoom lens history, we would find that two types of zoom designs were tried. The first was a mechanical arrangement where the shift of the final focal plane was compensated by adjusting the various lenses with cams and gears, since the lenses had to move different amounts, and in different direction although earlier work had ' one on the problem, Dr. S Zoomar lenses were the modern systems using optical compensation for the shift of focus as the zoom is made. By 1950 motion picture news photography saw Zoomars with 5 to 1 zoom (or

FOLLOWING THE SUBJECT:

Here's a pretty novel series of shots made by Budnick. By using the zoom feature you can keep your subject approximately the same size within the picture area even though it's moving towards or away from the camera. Here Budnick used the 82mm position when his wife was far away and gradually shifted to 36mm as she approached. Great depth of field at small aperture, f/16, assured acceptable sharpness for each shot.



82MM



70MM



60MM



50MM



40MM



BEMM

equivalent focal length) changes.

Basically, we can reduce the fairly complex design of the new Zoomar to that shown in the diagram on page 66. With this type of assembly, the shift of focal plane is exactly compensated in only three zoom settings. However, the front negative element helps to reduce the small focus shift that occurs between the three compensation points of the zoom range. Now, when the moving elements are forward, the front adds up to a positive lens, and the middle becomes a weak negative lens.

This boils down to an elementary telephoto type assembly. It is almost always afflicted with pincushion distortion and lateral color.

On the other hand, when the moving elements are in the back position, the front element is a simple negative, the central group has almost no power, and the rear element is now a positive lens. Thus, the whole thing now looks something like a simplified wide-angle lens. This is usually afflicted with barrel distortion, astigmatism and some coma.

Tests made on the new Zoomar revealed that the two types of distortion were present, and Dr. Back stated that this resulted from the severe restrictions put on the designer of a zoom lens.

According to Dr. Back, the important basic problem facing the zoom lens designer is to make sure that the lens aberrations remain nearly constant throughout the zoom range. The (Continued on page 164)

PLAYING WITH PERSPECTIVE:

Although the same shots opposite could have been made with six separate lenses, the Voigtlander Zoomar made them easily and allowed Dan Budnick to see just how much the brightly lit signs were apparently compressed by the longer focal lengths onto a single depthless plane. If any particular composition had pleased him, he could have framed the shot tightly with the zoom collar at that point. There would be no need to crop during enlargement or after making the print.



36M M





50MM



60MM



70MIN



82MM

MONTHLY CONTEST

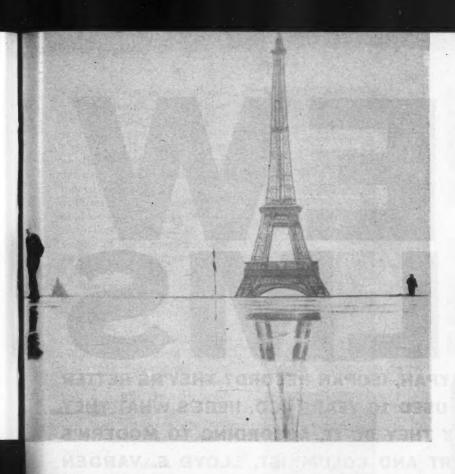
People in design: A "combining of forms"

THAT'S RIGHT—\$25 for every winner in Monthly Contest. The excellent quality of the pictures we receive from our readers has made the choice of a First, Second and Third prize almost impossible. We are pleased that high quality made this change desirable.

Anyone may enter any number of black-and-white prints in Modern's "Monthly Contest." Pictures must be 4 x 5 or larger, with the exception of Polaroid prints, which may be submitted in original size. Your name, address and all technical data must appear on the back of each print. No entry blanks are required. Please enclose a stamped (first-class postage), self-addressed envelope if you want us to return pictures we're unable to use. All entries considered for use elsewhere in the magazine. Send them to Columns Editor, Modern Photography, 33 W. 60 St., New York 23, N. Y.

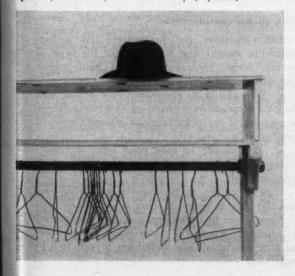
All Prizes
Now \$25
For Your
Pictures.
See Details,
Left!

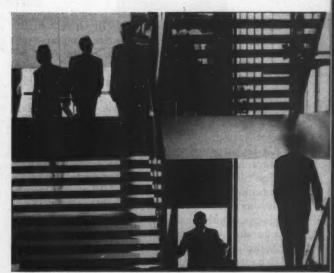




STRONG INFLUENCE OF ADVERTISING photography is evident in this humorous shot of "the man who wasn't there." With Royal-X Pan in his Medalist II, Casper Paprocki, Rochester, N. Y. shot at f/8, 1/50.

▼





WANT MORE THAN A SIMPLE PATTERN SHOT? △ Wait and see! "Combining forms" is simply one of the definitions of design just as one of the admonitions to photographers is "Wait for the right moment." Jurgen Heinemann, Osnabruck, Germany did both when he made this shot with his Leica at the Brussels Fair. Adox KB 17 exposed at f/1.8, 1/60 sec., stopped action.

FILMS

PLUS-X, SUPER HYPAN, ISOPAN RECORD? THEY'RE BETTER THAN THE FILMS USED 10 YEARS AGO. HERE'S WHAT THEY CAN DO AND WHY THEY DO IT, ACCORDING TO MODERN'S TECHNICAL EXPERT AND COLUMNIST, LLOYD E. VARDEN

THE SPECTACULAR PROPERTIES of current high-speed films are easy to glamourize. You have no doubt read at least one article of this sort in recent months, and so you know what I mean. But I have never been asked to participate in this program. And am I glad!

In my opinion, the emphasis that has been, and is being, placed on film "speed" is a bit overbearing, and possibly misdirected. I should not be surprised in the least to learn that photographic novices are beginning to believe that high film speed is about all that matters in photography. Film speed seems to be the order of the day, and the tremendous build-up it has been given recently makes it appear as though it is a product of the modern age; i.e., as a concept. Nothing could be further from the truth!

Everyone is fully aware of the fact that the light sensitivity of films today is much higher than that of films previously available. But film speed has to be equated against all other factors that contribute to image quality. Unfortunately, the emphasis on film speed has relegated nearly all other film characteristics to matters of secondary consideration. Embryo photographers look upon film speed as the keynote of photographic progress. They are able to come up with pictures of dimly lighted scenes that astound

those who were present when the exposures were made. In such instances, neither the amateur photographer nor the observers, could care less about the critical aspects of picture quality. It is regrettable that the mere accomplishment of producing a recognizable photographic image under extremely difficult conditions is now often considered to be the highest possible attainment in photography.

Film quality considerations

Let's consider the properties that a film emulsion should first have to give the type of results which represent the best photography can offer.

1. The ability to reproduce fine details and to give a visual impression of sharpness. These are essential for achieving the ultimate ends of photography.

n

2. The ability to give good tone reproduction. This is fundamental to creative efforts in photography.

3. The ability to produce negatives of reasonably low graininess. This is especially true for negatives to be enlarged and is imperative if prints are to exhibit the necessary smoothness of tone gradation and definition to satisfy (1) and (2).

It does not take a photographic genius to recognize the lack of detail or the general fuzziness of an unsharp photograph. However, the technicalities involved in image definition and sharpness are indeed complex.

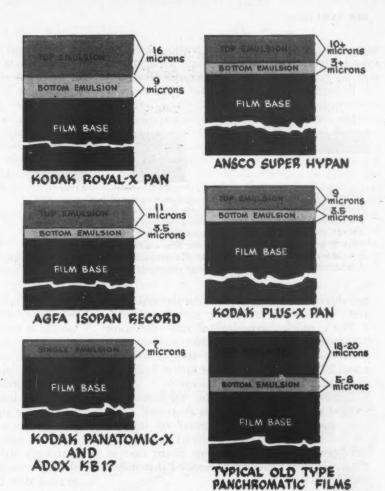
Films generally have been improved in their ability to reproduce detail and to give images of high sharpness appearance. I use "improved" in a relative sense; i.e., relative to film speed. But in some instances a real improvement has been made. Emulsion speed has not only been increased, but so have the definition and sharpness properties. (See illustration, page 74 and page 75.) Nevertheless, it is still generally true that highest possible definition and sharpness are not obtained with higher speed materials.

Definition and sharpness are different things. Definition refers to the quality aspect of a photographic image which we associate with clarity of detail. Sharpness is the subjective impression we have when viewing prints that enables us to say, "This print is sharper than the other."

You will note that I have made no mention of resolving power. This is an important property of film emulsions, but as such it does not mean very much in normal photographic practice. The reason for this

is that resolving power is a measure of a film's ability to reproduce details so fine that they will not be reproduced in a print.

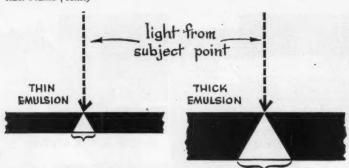
Now both definition and sharpness depend upon inherent characteristics of a film and also upon exposure. (I am assuming, of course, that optical factors and camera technique are the best that they can be.) Light from subject points is diffused when passing through an emulsion. (See illustration, page 74.) This causes a spreading of the light that leads to imperfect image recording. The more this light diffusion can be reduced, the better the definition and sharpness



MODERN HIGH SPEED PAN FILMS have somewhat thinner emulsions than even older ordinary pan films. Notice total emulsion thickness of Royal-X Pan (fastest modern film). It's about 25 microns or 1/1000 in. thick. Compare this with thickness of typical old pan emulsion—they're about the same. However, the image on the Royal-X Pan is contained mostly in the upper emulsion layer (in older films it's not). Effective emulsion thickness (portion of emulson on which image is formed) is less than older film and Royal-X Pan is about 16X faster to boot.

become. Manufacturers have found ways to reduce the thickness of emulsion layers and still maintain more or less normal recording characteristics. However, the emulsion thickness of the newer high-speed films has not been reduced as much as popularly supposed. Illustration above shows actual measurements of the emulsion thicknesses of a number of present-day films, plus the emulsion thickness of a typical older type panchromatic film.

These values, although measured to an accuracy of plus or minus 0.2 micron, were derived from single samples of each film product and do



NEW FILMS VS. OLD. At left is a cross-section drawing of a new film; right, an old film. Dotted lines denote light from camera lens (inside the camera) hitting light-sensitive film emulsion. As point of light penetrates emulsion, it spreads. The more it spreads, the less sharp it will appear on final negative. Since new film emulsion is thinner, image has less distance to travel (inside the emulsion) and spreads less. Advantages of less image spreading?—sharper detail.

not represent average values. But the variations from one sample to another are rather small.

For a quick comparison of size—there are 1000 microns in one millimeter and approximately 25 millimeters to an inch. Therefore, about 25,000 microns equal one inch or 1/25,000 of an inch is equal to one micron.

By reducing the emulsion thickness, the amount of image spreading is decreased. (See illustration, *above*. This method of improving the detail-rendering capacity of an emulsion has been carried to an extreme in the case of the single layer films such as Kodak Panatomic-X and Adox KB17.

Emulsion thickness is by no means the only thing that influences the detail-rendering capacity and sharpness characteristics of a film. The granularity of the emulsion grains, the contrast characteristics of the emulsion, the ability of the emulsion to respond favorably to development effects which tend to produce clean-cut edges and the effectiveness of the antihalation layer of a film are all important.

Exposure affects definition and sharpness, and there is invariably an optimum exposure at which these characteristics are a maximum. If the exposure is too small, the contrast or density separation will not be great enough to give good detail rendering. On the other hand, excessive exposure causes an increase in light spreading in the emulsion. The best exposure in most instances is the lowest exposure that can be given and still maintain a high excellence of tone reproduction.

Tone reproduction=brightnesses?

In a theoretical sense, ideal tone reproduction means that the brightnesses in a scene are translated via the negative to the photographic print such that the visual impression one has when viewing the print is the same as he would have in viewing the original scene. Probably no practical photograph has ever been taken which fulfilled this theoretical condition.

Modern high-speed films are capable of recording tone relationships quite acceptably, but it is questionable if their latitude in this respect is as wide as some of the older films. There are exceptions, but most of the newer high-speed films will not stand much over exposure without showing defects in tone repro-

duction. Exposures have to be held to a near minimum, otherwise highlights are reproduced too flat in contrast. And the better the highlights of a subject are delineated in a print, the better its over-all quality becomes.

But the greatest danger in modern photographic trends is pushing the speed of films beyond the limit where tone reproduction can possibly be anything near the optimum. Highest possible image quality remains the ultimate goal of good photography. To make exposures at extremely high speed, for example, by assuming the exposure index of the film to be many times greater than the recommended value, and still get results of one sort or another, is a cute trick, and every photographer should try it once. But the tone reproduction quality will be nothing to brag about. High film speed is fine, but perfection of subject reproduction should come first.

Graininess is subjective

Graininess in a photograph is often confused with grain size or granularity. Granularity is a physical attribute of a photographic image which can be measured objectively, whereas graininess is the subjective impression of heterogeneity that an observer has when viewing a photograph. Graininess involves two factors fundamentally; namely, grain size variations and the spacing of the grains with respect to each other. We can observe graininess before the degree of enlargement is sufficient to show individual silver grains or grain clumps.

Graininess tends to increase with exposure, which is another argument for using the minimum exposure necessary for excellent quality. It also is increased when over development is used to achieve an increase of contrast.

The newer high-speed films cannot be categorized as more grainy or less grainy than previous high-speed films. The one statement that can be made, though, is that if you want the highest possible film speed you have to be prepared to accept something less than fine graininess. It is remarkable that film speed increases have been possible without increasing graininess characteristics beyond the point of acceptability. But the highest speed films today are certainly not outstanding in their graininess characteristics.

Throughout the history of photography discussions on the "speed aspects" of the photographic process have found their way in print. A few weeks ago, I thumbed through the advertisements that appeared in a number of photographic magazines published during the late 1800's and early 1900's, and I found—as expected—an abundance of claims for high emulsion speed. The wording of some of these advertisements could be reprinted today with hardly any change. Expressions such as "ultra-

rapid," "express," "superspeed," etc., not unlike the terms one finds today in descriptions of high-speed materials, are commonplace in the older photographic literature. But the attitude toward high film speed then, as compared to that of today, was quite different. Let's explore some of the reasons.

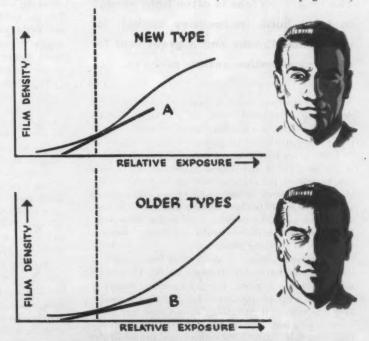
What is a high-speed film?

Most of you probably consider the question, "What is a high-speed film?" rather ridiculous. Yet, the answer is not so simple. It was not so many years ago, for example, that high-speed connoted inferior emulsion properties. It was generally conceded by photographers that so-called super high-speed emulsions should be used only when conditions were so extremely adverse that a picture could not be made otherwise. A high fog level, a high degree of graininess, and a flat gradation had to be tolerated when circumstances demanded the use of these older super-duper films or plates.

It is difficult for amateur

photographers today to believe that no more than thirty years ago there were many professional photographers who refused to try the highspeed films that were being introduced at that time. The prevailing opinion was that increased emulsion sensitivity could be obtained only by sacrificing picture quality. This prejudice was so firmly established that photographers were extremely reluctant to accept progress as it was being made. The old-timers used to argue that it took time for light to penetrate an emulsion in order to give a full-bodied image. It was their belief that fast emulsions, requiring short exposure times, could not possible produce an image "rich in silver," which was a pet way for expressing the necessary condition for high negative quality.

Now I do not want to imply that the photographer of only a little over a generation ago was completely unconcerned about emulsion speed. He did expect the materials he used to meet the standards of speed existing at the time, but his evaluation of (Continued on page 147)



NEW FILMS GIVE MORE SHADOW DETAIL. Look at each simplified graph, above, and the simplified illustration right next to it. Both films are equal in speed. But if you look closely at the lower portion of each curve (this denotes the negative's shadow density), you'll see a straight line which we've added. The line for the new film is steeper than the one for the old film. This shows that as exposure is increased slightly in the shadow portion of the film, shadow density in the new film increases at a greater rate than in the old film. Therefore, in new film there would be a greater density change in the shadow areas than in old film. And the greater the density change the more printable shadow detail you get. You can see the result in the accompanying portrait sketches.

L-O-N-G LENSES

The long, long lens is often light enough to hand hold, inexpensive enough for most pocketbooks and a great tool for shooting attention-getting pictures.

IT WASN'T LONG AGO that a 300mm lens could easily be defined as a gigantically long and expensive tube resembling sewer pipe (weighing about the same as sewer pipe) through which hazy pictures could be made.

A few years have brought radical changes not only to the mechanical and optical properties of the long lens but also to the importance of the long lens for the amateur and professional photographer. Although a good tripod is still the best friend a long lens ever had, a 300mm lens capable of being hand held at moderately fast speeds, costing little more than a 135mm is scarcely looked on as anything unusual.

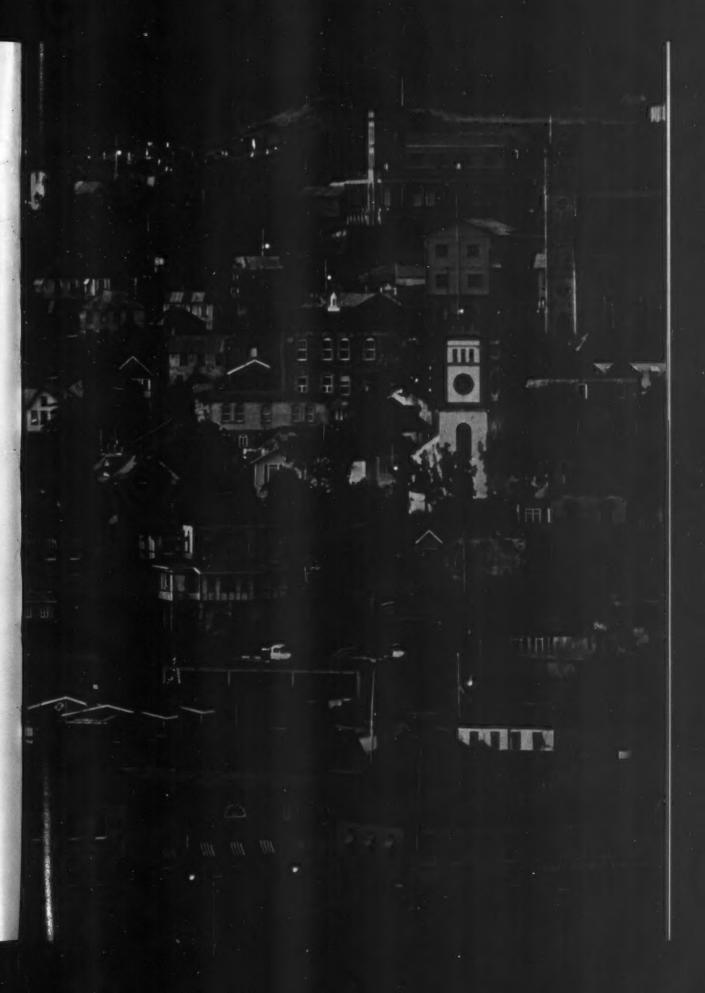
The peculiar nature of the optical beast makes it quite an important tool for dramatic results. The picture opposite is case in point. You don't need an expert to tell you that the photographer, Leonard Balish, used a long lens to shoot it. Something about the picture fairly screams long lens. Actually the characteristic which distinguishes this picture is the compression caused by the extreme distance of the objects. The distance between the near houses on the shore and the far houses further up the hill is minimized-much more than it would appear to the naked eye had you seen the town up close. The fascinating profusion of close images here would not have existed if Balish had been able to shoot the picture from a closer view with a normal lens. We'd like to emphasize here that it is only the camera-to-subject distance rather than the focal length that actually controls this trick in perspective. If Balish had been able to shoot the same scene from the same point with a normal lens and had then enlarged the central image to the same size as the picture *opposite*, the compression would still appear. However, the image of course would have been much fuzzier and degraded. If it's both sharp and compressed, a long lens did it.

The relatively limited depth of field of the long lens is seldom realized. Although the portrait of the Mexican boy on page 78 was shot at camera-to-subject distance of 12 ft., the f/4 aperture only registered a few inches in actual focus. The amount of depth of field is just about the same as if photographer Jay Maisel had stood two feet from the boy and made the picture at f/4 with a 50mm lens, producing the same size image on the film.

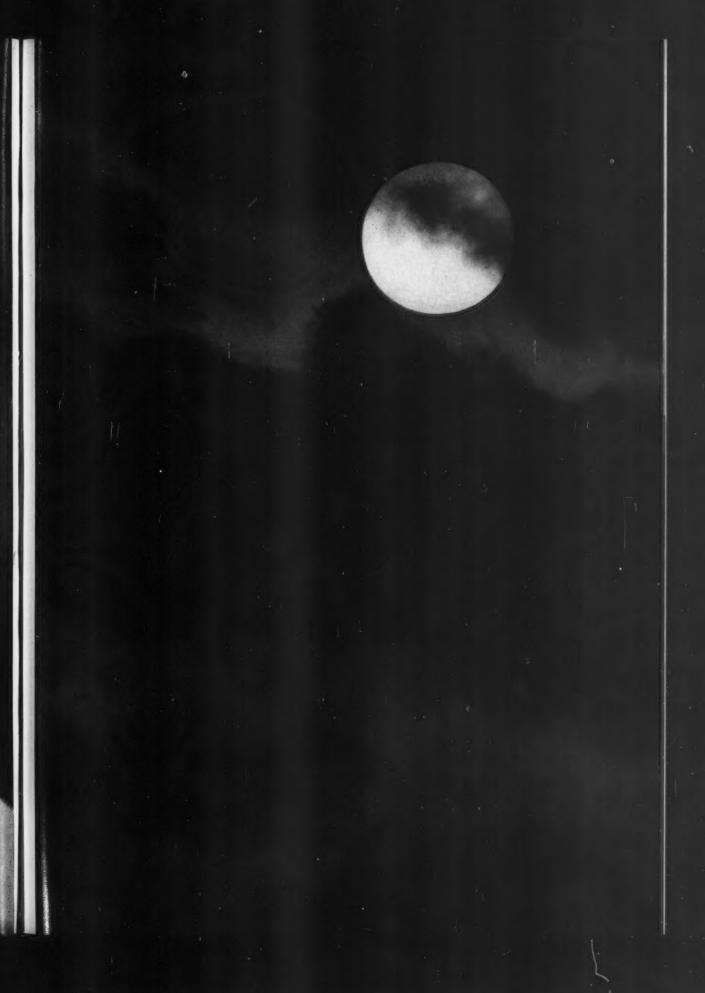
The long lens is splendid for picking out detail. A small area of building wall high above people's heads or a section of sky becomes a dramatic design as seen through the long lens. Detail that you have passed over jumps out at you when you narrow your field to a few degrees of arc. The long lens concentrates your interest.

Here are a few tips in using a long lens. First, make sure it fits your camera and budget (see page 81). In use, think of it as a high powered rifle that must be held rock steady, the long barrel adequately supported, your feet braced against any incline of the ground or even a slight breeze. Next, learn to squeeze the shutter release as if it were a rifle trigger. The smallest jar which would not alter the image quality of the picture made with the 50mm lens may ruin your long lens picture. Every slight motion or vibration of a long lens is exaggerated in the final shot. The long lens calls for steady nerves and a steady hand and a good subject.—H. K.

COMPLETE TECHNICAL DATA ON COLOR PICTURES IS ON PAGE 80, LIST OF LONG LENSES AND THE PARTICULAR CAMERA BODIES THEY FIT FOLLOW ON PAGE 81.







COLOR CAPTIONS FROM THE PRECEDING PAGES

LANDSCAPE: The most obvious use of the tele lens is to bring objects closer, particularly images which prevent the photographer from getting closer. If Leonard Balish had decided to get a nearer view it would have been a wet one indeed since a body of water separated him from the Caribbean town of St. George's Grenada. At twilight Balish focused his 300mm Tele Kilar lens and used the incident light meter reading indicated—an f/4.5 exposure at 1/10 sec. on Kodachrome. Instead of using a tripod, the Leica IIIf and Visoflex reflex housing were rested on a stone terrace wall.

PORTRAIT: Too bashful to sneak up for a portrait on people you don't know? Are the subjects a little camera shy? The young Mexican seen here full frame, was actually 10 to 12 feet from Jay Maisel's Miranda camera when he made this shot using a 300mm f/4 Sonnar lens. At 1/100 sec., Maisel had no trouble hand holding the lens. He used Super Anscochrome which he found quite fast enough to allow the lens to be hand-held for outdoor work.

SUN AND CLOUDS: If you have a 600mm Kilar lens you don't *think* about mounting it on a tripod, you *do* it. Outdoors, the slightest wind will cause too much swaying and vibration unless you use a heavy duty unit. Y. Ernest Satow, in search of some distant pelicans on the California seashore found few pelicans but an interesting sun and cloud effect instead. To shoot directly at the sun, he used the smallest aperture, f/45 at 1/1000 sec. on Kodachrome. The length of tele lens was responsible for the relatively large sun image on the final Kodachrome slide.

WHICH LONG LENS OVER 300MM

HOW TO USE LENS LIST

The code letters opposite your camera's name (below) are the key to the selection of lenses which will fit it. You'll note that a number of cameras share the same code, indicating that they will accept the same lenses. For example, threaded Canon and Leica lenses (LC) will fit the same lens mounts.

Contax and Nikon lenses may be interchanged with good success, too, up to 50mm. In focal lengths of 35mm and longer, differences in back focus, absorbed by the greater depth of focus in shorter lenses, make themselves felt.

Preset and non-preset Exakta and Topcon R lenses may be used interchangeably.

Alpa Reflex 4, 5,	6.7	AL
Asahiflex	DWG STORY STORY	AH
Asahi Pentax		PC
Astra 35		PC
Astraflex 35		PC
Astraflex II		AX
Canon		LC
Catalina Reflex		PC
Columbia		PC
Consol		PC
Contax IIa, IIIa		CX
Contax D, S		PC
Corbina		PK
Edixa Reflex		PC
Exakta		EX
Exakta 66		ES
Gamma		LC
Hasselblad 1000		HA
Hexacon		PC
Hexacon Suprem		PK
Kalimar Reflex		KA
Korelle Reflex		KR
Leica		LC
Leica M3		LM
Leotax		
		LC
Master Reflex		MR
Master Reflex Melcon		
Master Reflex Melcon	oper adapter)	MR LC
Master Reflex Melcon Miranda (with pr		MR LC EX-PC
Master Reflex Melcon Miranda (with pr (close-ups only		MR LC EX-PC NI-CX-LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca		MR LC EX-PC NI-CX-LC LC
Master Reflex Melcon Miranda (with pr (close-ups only		MR LC EX-PC NI-CX-LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca		MR LC EX-PC NI-CX-LC LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex		MR LC EX-PC NI-CX-LC LC NI AX
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless		MR LC EX-PC NI-CX-LC LC NI AX LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon		MR LC EX-PC NI-CX-LC LC NI AX LC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless		MR LC EX-PC NI-CX-LC LC NI AX LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon		MR LC EX-PC NI-CX-LC LC NI AX LC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacan Praktica Praktiflex		MR LC EX-PC NI-CX-LC NI AX LC PC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacan Praktica Praktiflex Praktina		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktina Primar Reflex		MR LC EX-PC NI-CX-LC LC NI AX LC PC PC PC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacan Praktica Praktiflex Praktina		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktina Primar Reflex		MR LC EX-PC NI-CX-LC LC NI AX LC PC PC PC PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktina Primar Reflex Rectaflex Reflex 66		MR LC EX-PC NI-CX-LC LC NII AX LC PC PC PC PC AX RF RX
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktina Primar Reflex Rectaflex Reflex 66 Ritacon		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC PK AX RF RX
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktica Praktiflex Praktina Primar Reflex Rectaflex Reflex 66 Ritacon Rival Reflex		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC PK AX RF RX PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktina Primar Reflex Rectaflex Reflex 66 Ritacon		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC PK AX RF RX
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktica Praktiflex Praktina Primar Reflex Rectaflex Reflex 66 Ritacon Rival Reflex		MR LC EX-PC NI-CX-LC NI AX LC PC PC PC PK AX RF RX PC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktiflex Rectaflex Roflex 66 Ritacon Rival Reflex Robot Royal 24 Soligor 66 Reflex		MR LC EX-PC NI-CX-LC LG NI AX LC PC PC PC PC PC PC RX RF RX PC RX RX
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacan Praktica Praktiflex Praktiflex Praktiflex Rectaflex Reflex 66 Ritacon Rival Reflex Robot Royal 24 Soligor 66 Reflex Super D		MR LC EX-PC NI-CX-LC LG NI AX LC PC PC PC PC PK AX RF RX PC PC RR KA
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktiflex Rectaflex Reflex 66 Ritacon Rival Reflex Robot Royal 24 Soliger 66 Reflex Super D Tanack		MR LC EX-PC NI-CX-LC LC NII AX LC PC PC PC PK AX RF RX PC PC RR KA PC LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacan Praktica Praktiflex Praktiflex Praktiflex Rectaflex Reflex 66 Ritacon Rival Reflex Robot Royal 24 Soligor 66 Reflex Super D		MR LC EX-PC NI-CX-LC LG NI AX LC PC PC PC PC PK AX RF RX PC PC RR KA
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktiflex Rectaflex Reflex 66 Ritacon Rival Reflex Robot Royal 24 Soliger 66 Reflex Super D Tanack		MR LC EX-PC NI-CX-LC LC NII AX LC PC PC PC PK AX RF RX PC PC RR KA PC LC
Master Reflex Melcon Miranda (with pr (close-ups only Nicca Nikon Peerflex Peerless Pentacon Praktica Praktiflex Praktiflex Praktiflex Reflex Reflex 66 Ritacon Rival Reflex Robot Royal 24 Soligor 66 Reflex Super D Tanack Topcon R		MR LC EX-PC NI-CX-LC NII AX LC PC PC PC PC RR RX PC RR KA PC LC TR

FITS YOUR OWN CAMERA? HERE'S MODERN'S COMPLETE LISTING.

300mm f/5.6 Noflexar Follow Focus, Novoflex, Germany, EX-PC-FX-AL-TR, \$256.50; with reflex housing, LC, \$243.50; CX-NI, \$239.50

300mm f/5.6 Tele-Kilar. Kilan, Germany. Preset diaphragm, AL, \$179; basic lens, preset diaphragm, \$197.50; adapters for EX-PC-TR, \$15; AL, \$24.50; HA, \$20; RF, \$16.50

300mm f/5.5 Tele-Xenar. Schneider, Germany. RR, \$199

300mm f/5 Astragon. Sterling-Howard, Germany, AL-AX-EX-HA-MR-PC-PK-AH-TR-KR-RF, \$109.50

300mm f/5 Fernbild. Astro, Germany. For all single-lens reflexes, \$195; with reflex housing, LC, \$345

n f/4.5 Tele-Megor. Hugo Meyer, Germany. Preset diaphragm, EX-PK-TR, \$199.50

300mm f/3.5 Telagon, Tewe, Germany, Preset diaphragm, AL-AM-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$355

300mm f/4 Pan-Tele-Kilar. Kilfitt, Germany, Preset diaphragm, basic lens, \$429.50. Adapters or flanges with filter slot for AL-EX-MA-PC-PK-RF, \$24.50; regular adapters for EX-PC-LC (uncoupled), \$15

300mm f/4 Takumar. Asahi Optical Co., Japan. AH-PC, \$223

300mm f/3.5 TV Ferninse. Telegon, Germany. EX-TR, \$360 300mm f/2.8 Top.or. Tokyo Optical Co., Japan. Preset diaphragm, EX-TR, price to be announced

EA-TR, price to be announced 325mm f/8 Helm & Jamer. Holm & Jamer, U.S.A. For all interchangeable lens single-lens reflexes, \$10 350mm f/4.5 Nikker. Nippon Kogaku, Japan. NI (requires Nikon reflex housing), price to be announced 360mm f/5.5 Tele-Xenar. Schneider, Germany. Preset diaphragm, AL, \$209, EX-PC-PK-TR, \$189.50

385mm f/4.5 Tele-Athenar. Century, U.S.A. For all single-lens reflex cameras, \$199.50

400mm f/7.5 Astronar, Astronar, U.S.A. EX-PC-PK-TR, \$59.50

400mm f/5.6 Astragon. Sterling-Howard, Germany. AL-AH-EX-HA-MR-PC-PK-AX-KA-KR-RF-TR, \$117.95

400mm f/5.6 Fernobjektiv. Navoflex, Germany. With reflex housing, LC, \$266; CX-NI, \$262.50

400mm f/5.6 Fernobjektiv Follow Focus. Novotlex, Germany. EX-PC-PK-AL-TR, \$279.50

400mm f/5.5 Farn-Kilar, Kilfitt, Germany. Preset diaphragm, basic lens, \$249.50; adapters for EX-PC-TR, \$15; AL, \$24.50; RF, \$16.50; HA, \$20; LC (uncoupled), \$15

400mm f/5.5 Roter. Scopus Brockway, Japan. Preset diaphragm, EX-PC-TR, \$179.95

400mm f/5.5 Tele-Astronar, Sterling-Howard, Germany, EX-PC-TR, 577.50

400mm (/5.5 Tele-Megor, Hugo Meyer, Germany, Preset diaphrogm, ES-EX-PK-TR, \$199.50

400mm f/5.5 Tele-Voss. Plesker, Germany. Preset diaphragm, basic lens \$198; adapters for AL-AH-EX-HA-MR-PC-PK-AX-KA-KR-RF-TR, \$16; for LC-CX-NI (uncoupled) \$16

400mm f/5.5 Tele-Voter. Piesker, Germany. Preset diaphragm, basic lens. \$120; adopters for AL-AH-EX-HA-MR-PC-PK-AX-KA-KR-RF-TR, \$16; for LC-CX-NI (uncoupled), \$16

400mm f/5 Astragon. Sterling-Howard, Germany. AL-AX-EX-ES-NA-KR-MR-PC-RX-TR, \$129.50; with reflex housing, LC-CX-NI,

400mm f/5 Fernbild. Astro, Germany. For all single-lens reflexes \$245; with reflex housing, LG, \$395

400mm f/5 Telon. Tewe, Germany. AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$220

400mm f/5 Telon Follow Focus. Towe, Germany. Gunstock mount, AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$335

400mm f/5 Telyt. Leitz, Germany. LC (requires Visoflex reflex housing), \$465

400mm (/4.5 Canon. Canon Camera Co., Japan. LC (for use with reflex housing), \$471

400mm 1/4.5 Tele-Ennalyt. Enna Werk, Germany. PC, \$119.50

400mm f/4.5 Tele-Votar. Piesker, Germany. Preset diophrogm, basic less. \$220c adapters for AL-AH-EX-HA-MR-PC-PK-AX-KA-KR-RF-TR, \$16; for LC-CX-NI (uncoupled), \$16

400mm f/4.5 TV Fernlinse. Telagon, Germany. EX-TR, \$360

400mm f/4 Sport Fern-Kilar. Kilfitt, Germany. Preset diaphragm, basic lens, \$469.50, adapters or flanges with filter slot for AL-EX-HA-PC-PK-RF, \$24.50; regular adapters for EX-PC-LC (uncoupled) \$15

500mm 1/5.6 Tele-Atherar. Century, U.S.A. For all single-lens reflex cameras, \$249.50; for LC requires reflex housing.

500mm f/5 Astragon. Sterling-Howard, Germany. AX-EX-ES-HA-KR-MR-PC-RX-TR, \$244; with reflex housing, LC-NI-CX, \$348

500mm f/5 Fernbild. Astro, Germany. For all single-lens reflexes, \$393; with reflex housing, LC, \$545

50Gmm f/5 Nikker. Nippon Kogaku, Japan. NI (requires Nikon reflex housing), \$550

500mm f/5 Takumar. Asahi Optical Co., Japan. AH-PC, \$264

ım f/5 Telen. Tewe, Germany. AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$395

500mm f/5 TV Fernlinse, Telagon, Germany, EX-TR, \$450

600mm f/6.3 Tele-Athenar, Century, U.S.A. For all single-lens reflexes, \$295; with reflex housing, LC, \$295

600mm f/5.6 Fern Kildr. Kilfitt, Germany, Preset diaphragm, basic lens, \$599.50; adapters for EX-PC-TR, \$15; AL, \$24.50; MA, \$20; RF, \$16.50

600mm f/5 Astragon. Sterling-Howard, Germany. AX-EX-ES-HA-KR-MR-PC-RX-TR, \$339; with reflex housing, LC-CX-NI, \$443

600mm f/5 Telon. Tews, Germany. AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$725

640mm f/5 Fernbild. Astro, Germany. For all single-lens reflexes, \$725; with reflex housing, LC, \$875

800mm f/8 Canon. Canon Camera Co., Japan. LC complete with Canon reflex housing, \$796

800mm f/6.3 TV Fernlinse. Telagon, Germany. EX-TR, \$750

800mm f/5 Astragon. Sterling-Howard, Germany. AX-EX-ES-HA-KR-MR-PC-RX-TR, \$449; with reflex housing, LC-CX-NI, \$449

800mm f/5 Fernblid. Astro, Germany. For all single-lens reflexes, \$895; with reflex housing, LC, \$1050

800mm f/5 Telen, Tewe, Germany, AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$895

1000mm f/8 Takumar. Asahi Optical Co., Japan. AH-PC, \$890

1000mm f/6.3 Astragon. Sterling-Howard, Germany. AX-EX-HA-KR-MR-PC-RX-TR, \$559; with reflex housing, LC-CX-NI, \$663

1000mm f/6.3 Fernbild. Astro, Germany. For all single-lens reflexes \$1100; with reflex housing, LC, \$1250

1000mm f/6.3 Telon. Yewe, Germany. AL-AH-AX-EX-HA-KA-KR-MR-PC-PK-RF-TR, \$1100

2009mm f/10 Fernbild. Astro, Germany. For all single-lens reflexes, \$4500

2000mm f/10 Telon. Tewe, Germany. With reflex housing, LC-CX-NI, \$3500

20-in. f/6.3 Fototel. Wollensak, U.S.A. Mirror optics, for all 35mm single-lens reflexes, price on request

20-in. f/5.6 Reflectar. Zoomar, U.S.A. Mirror optics, for all 35mm single-lens reflexes, price on request

25-in, 1/6.3 Reflectur. Zoomar, U.S.A. Mirror optics, for all single-lens reflexes, price on request

40-in. f/8 Reflector. Zoomar, U.S.A. Mirror optics, for all single-lens reflexes, price an request

80-in. f/15 Reflector, Zoomar, U.S.A. Mirror optics, for all single-lens reflexes, price on request

100-in. F/20 Reflector. Zoomar, U.S.A. Mirror optics, for all singlelens reflexes, price on request

150-in. 1/25 Reflecter. Zoomar, U.S.A. Mirror optics, for all single-tens reflexes, price on request

Variable: 175mm f/3.5; 225mm f/4.5; 250mm f/5; 315mm f/6.3 Telestigmer. Dr. Woth, Germany, Various focal lengths by choice of lons element combinations. Preset diaphragm, for all single-lons reflex cameros, \$225



7 photographers tell their approach

HOW I MADE THIS PICTURE



HIGH KEY PRINT, opposite page, was planned at the time of the shooting. Hank Parker exposed "normally" then pushed the film in development to increase contrast and block up highlights. The print was made on a hard (No. 4) paper. Model (this is one of a group of test shots) was illuminated by a 1,000 watt-second Strobo Research unit, bounced in foil tent. Parker used a Hasselblad camera equipped with an 80mm lens, moved in as close as possible in order to fill the $2\frac{1}{4} \times 2\frac{1}{4}$ field with the head. By photographing three quarters, rather than full face, view Parker avoided possible distortion, captured enigmatic, sidelong glance. Exposure was f/16 on old-type Plus-X film.

USE SILHOUETTE to emphasize design. Gray-and-black effect above was deliberate, for all practical purposes achieved in the exposure. Morris H. Jaffe underexposed Plus-X film by about four f-stops, shooting at f/8 and 1/1000 sec. Development was normal, by time and temperature, in Kerofine; print was made on No. 2 paper. If Jaffe had pushed film and had printed on a very hard paper, result would have been conventional black-on-white rather than black-on-gray variation. Wide-angle look of picture was achieved by cropping.



LOW, LOW VANTAGE POINTemphasized child's height, additionally prevented horizon line from intersecting important area of picture. Gerard Oppenheimer used a Rolleiflex, Plus-X film, shot at 1/250 and f/8 to photograph small girl and pinwheel at New York beach. Ground level point of view is easily achieved with reflex cameras. You can put them down, look down into them without actually lying down yourself. Before he photographed this child, Oppenheimer approached the parents and asked for permission. During the course of the shooting, the child lost all traces of initial camera consciousness. Oppenheimer spent a total of several hours with the family, shot a number of rolls from different angles of different situations.

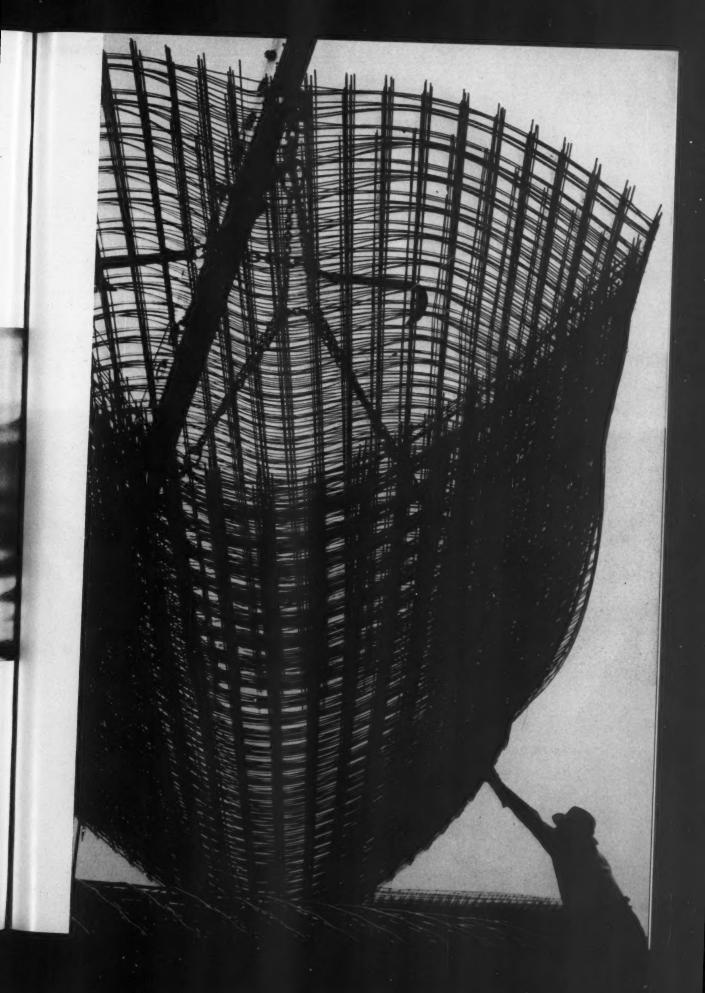
catch them in action! Need boy plus dog equal corn? The posed kiddie and pet picture has been often—and over—done. The child, more often than not, seems strained and precious; the animal seems strained and bored. Impatient small fry and animals are infinitely better suited to the candid approach, as practiced by Murray Frank in photograph below. Frank was visiting relatives in the country and noticed boy and dog playing in the yard. He went outside, and without distracting their attention, took a series of pictures. Frank used a Leica M-3 equipped with an f/2 Summicron lens. The exposure was 1/25 sec. and f/2 on Adox KB-17, since it was late afternoon on a rainy day and the light level was low.

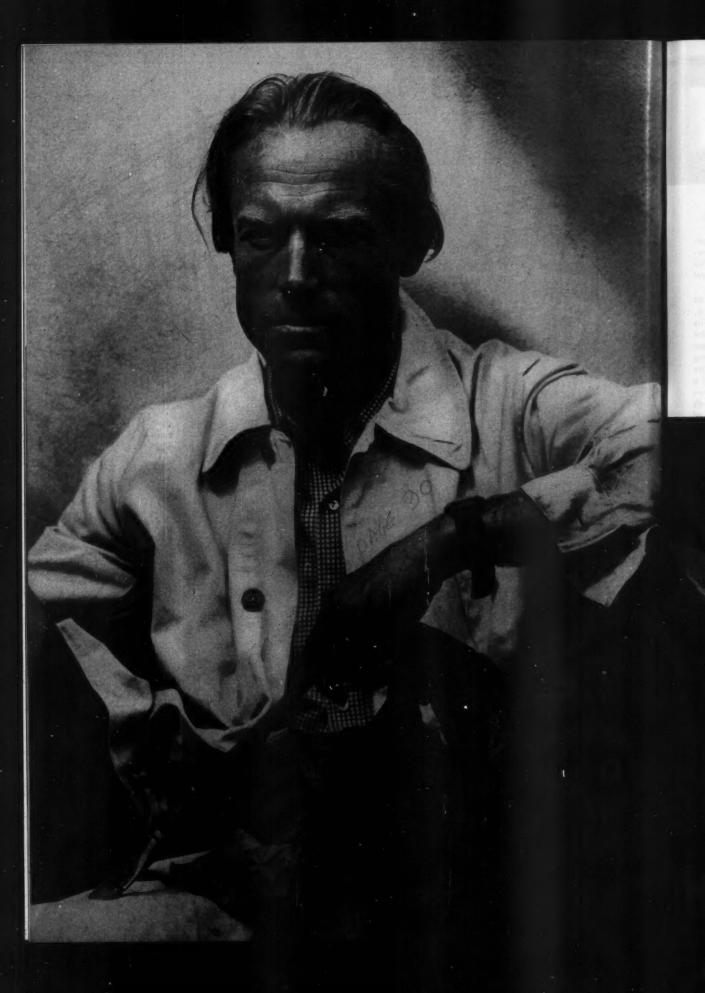


prille at right transforms ordinary, workday situation into an extraordinary picture. Every element—the grille, the man, the crane, and the white areas—functions in the composition. Yoichi R. Okamoto, while conducting a photographic workshop, was discussing shape and how it functions in photographs. This picture was made on a field trip with the class while it was working on this project. Actually, workmen were unloading the iron mesh which underlies concrete pavement. The grilles were on flat cars, and were removed by cranes, guided by the workmen. Dramatic, semi-silhouette effect came from extreme subject brightness range rather than from any special manipulation on the part of the photographer. Nikon, 35mm lens, f/8 and 1/250 sec., Plus-X film developed normally in UFG.



FANCY PRINTING TECHNIQUE is largely responsible for photograph of gull above. Georgina Reid made double print from two separate negatives, one of the bird, the other of the background. She photographed the gull from the Staten Island ferry, shooting straight up. The background—apparently waves or clouds—was actually cellophane over black felt. The bird was shot with a 105mm lens on a Nikon, Plus-X film, f/11 and 1/250 sec. in bright sunlight. The cellophane (carefully arranged on living room floor, and illuminated by a 100-watt bulb) was photographed with a Contax D and 58mm Biotar lens. A camera having through-the-lens viewing is almost essential for this type of work, since a minute difference between shooting and viewing angle would completely change the pattern of the reflections. Mrs. Reid shot a whole 36-exposure roll of the cellophane, selected the specific frame to emphasize the horizontal composition suggested by bird alone.





CONTROL-of lighting, pose, composition, exposure—typical of large camera portraiture contrasts with accidental quality of miniature camera work in vogue today. Even though Peter Keetman works with a large camera, he prefers using natural light to the complicated lighting setups often associated with studio portraiture. However, lighting effects are always carefully calculated, as evidenced by portrait of painter at left. Illumination was daylight, and one spot. Of his aproach to portraiture in general, Keetman writes: "I only take pictures of friends with whom I have some rapport. They must be without self-consciousness. and I usually have known them for a long time." Here. Keetman worked with a 4 x 5 Linhof, 240mm Heliar lens, f/12.5 and 1 second.

TRY CROPPING for a big imagethere are three possible ways to take head only portraits: stand back and use a telephoto, photograph from a close-up position, or crop down in enlarging. In making picture of nephew and kitten below, Morris H. Jaffe shot with a Rolleiflex from a distance of about 4 ft.. enlarged small (approximately 35mm size) portion of 120 negative. Although closeup devices are available for most twinlens reflexes, you may find there is a definite reason why this technique is preferable. Full face portraits, shot with close-up lenses usually seem distorted. Relatively large 21/4 x 21/4 negatives allow extreme cropping without any noticeable grain or loss of resolution. Exposure was f/11 and 1/50 sec. on Verichrome Pan film.



MODERN

MODERN PHOTOGRAPHY'S exclusive monthly equipment report section devoted to informative, unbiased field tests of equipment submitted to the editors for review.

SINGLE-LENS REFLEX: 35mm MINOLTA SR-2



Specifications: 35mm eye-level single-lens reflex. Lens: 6-element 55mm f/1.8 Auto Rokkor with stops to f/22; focusing to 18 in. Shutter: Cloth focal-plane with speeds from 1 to 1/1000 sec. plus B, FPX sync, self timer. Focusing: Eye-level reflex with condensing and Fresnel lenses, rapid return mirror. Other features: Completely automatic, self contained diaphragm, automatic exposure frame counter, rapid wind and rewind cranks. Price: \$249.50. Importer: Kanematsu New York, Inc., 150 Broadway, New York 38, N. Y.

The Minolta SR-2 is one of the most advanced, well engineered, and handsomely designed new cameras in the top quality 35mm field. By adopting a slightly smaller than life-sized prism viewing image, the Japanese manufacturers have been able to provide an exceptionally brilliant, extremely fine-grained focusing image whose entire viewing area is easily visible, even to photographers wearing glasses. The automatic diaphragm

is really completely automatic. When you press the shutter release located in the middle of the single-throw rapid wind lever, the lens stops down to the predetermined setting, the shutter is tripped and the mirror returns to viewing position, all in fractions of a second. When you wind the film to the next exposure the diaphragm automatically recocks to full focusing aperture for easy viewing.

The diaphragm mechanism is quite unlike that in any other single-lens reflex. The connecting pin which controls it from the back of the lens actually travels in the rotary direction of the diaphragm leaves themselves. It's a simple solution to a complicated problem and highly unlikely to get out of order.

All the shutter speed markings are located on one single dial atop the camera. The dial does not rotate during exposure. The fast shutter speeds are placed rather too close together for comfort. When you open the camera back, which is done rapidly by pulling upwards on the rewind knob, the automatic counter mechanism located in a magnified window atop the camera automatically returns to a prezero position allowing the proper number of frames to clear the exposed film before registering as frame number 1. Incidentally, all markings, frame numbers, shutter and footage settings, and lens openings are very legibly engraved with white numbers contrasted against a black field.

The camera loads quickly. Some quarrel can be made with the novel take-up spool which holds the film by one sprocket. When rewinding the test SR-2 after exposure, the sprocket holder cuts a small slice through the film leader as the film is pulled loose. The design is novel but effective.

The solid metal, rapid wind crank has a long, smooth, but slightly heavy 180 degree throw. The added resistance actually is caused by the automatic diaphragm cocking mechanism which uses a strong diaphragm cocking spring. The rewind crank has a free spinning handle. In combination with the rewind button which stays in

the rewind position without any constant pressure when once pushed inwards, you can get your film back into the original cartridge within a few seconds.

The 55mm f/1.8 Rokkor lens was exceedingly sharp at full aperture, even at the edges, and reached its greatest overall sharpness at a point between f/5.6 and f/8. A push button control prevents the diaphragm setting from slipping. The lens barrel, in satin black with slight chrome trim, has a novel bayonet mount which allows lenses to be interchanged in seconds using only one hand. The knurling of the lens provides a smooth, effortless focusing movement. In all, the camera is relatively compact for a single-lens reflex, easy to operate, well made and nicely finished. We did, however, wish that the very reliable shutter mechanism was a bit quieter for making candid shots.

te

Besides the camera and prime lens, we also tested a really excellent 135mm f/2.8 preset Rokkor lens (\$125), a fine 100mm f/3.5 lens in completely automatic mount (\$95), and a host of accessories. We saw microscope adapters, extension tube sets, critical magnifiers, Exakta and Leica lens adapters and right-angle finders which give the noninterchangeable prism Minolta SR-2 the flexibility of the reflex cameras which can be fitted with waist level finders.

The Minolta people are thinking of the SR-2 as a camera system rather than just as a single camera. For the future they promise an automatic 35mm lens, a 180mm f/2.5 and a 240mm f/4 lens, split image range-finders for those who want them (not me) and maybe a black model for those who like to blend in with the scenery (me). In addition, we were checking a Japanese magazine and found that Minolta is also working on a 55mm f/1.5, 85mm f/1.8 and 100mm f/2 lenses as well.

Two months of intense tests failed to show any mechanical or optical flaw in the SR-2. It's a compact, easy-to-use instrument.—H. K.

TESTS

the newest cameras
the latest films
important accessorio

WALZ ENVOY BEARS GOOD 35MM NEWS



Specifications: 35mm rangefinder camera. Lens: non-interchangeable 7-element, 48mm f/1.9 Kominar with stops to f/16; focuses down to 2.7 ft. Shutter: betweenthe-lens leaf-type Copal SLV shutter, 1 to 1/500 sec. plus B, MX sync, self timer. Focusing: projected frame view rangefinder with parallax markings. Other features: LVS, single stroke film advance, rapid rewind crank, double exposure prevention, film reminder dial on camera case. Price: \$69.95; leather ever-ready case, \$12.50. Importer: U. S. Photo Supply Co., Inc., 6478 Sligo Mill Rd., Washington 12, D. C.

There are many good cameras in the moderate price range, but here is one that offers more than a generous share of advantages. The Envoy is a camera that fits your hand well, provides bright viewing and focusing (eyeglasses and all), and operates both simply and smoothly.

Its film advance lever is one of the best we've handled, moving easily and coming back to rest in such a position that it sits slightly out from the camera body, accessible for the next advance.

Sharpness was good at f/1.9 (corner sharpness fell off only slightly). Optimum aperture was f/5.6. Here overall sharpness was very good.

Placement of the flash sync is clever, located at the top left side of the camera rather than on the front of the

body where the sync might get in front of the lens. A quarter turn of the focusing ring takes in images from 2.7 feet to infinity—thus your subject goes in and out of focus very quickly. The take-up spool works deftly, too. Lay the film in the slot, engage a sprocket hole on a small claw, and away you go with no film slippage.—D. J.

LOOK! A REAL ZOOM LENS FOR YOUR 35MM!

Specifications: Voigtlander-Zoomar continuously variable f/2.8 zoom lens for 35mm reflex cameras. Aperture range: f/2.8-f/22 in all focal lengths. Minimum focus: 4.5 ft. Price for semi-automatic diaphragm fitting focal-plane shutter single-lens reflex cameras; for automatic diaphragm model fitting Voigtlander Bessamatic only. (Although not officially announced, MODERN estimates price to be about \$300). Importer: H. A. Bohm and Co., 4761 W. Touhy, Chicago 46, III.



We could hardly control our excitement during this test of what we feel is a great step forwards in photography. The possibilities of the lens seem endless (see pages 66 to 69 for more technical zoom information).

The new Voigtlander Zoomar lens is ruggedly built, handsomely finished in black alloy metal, no heavier than a light 135mm lens, and relatively compact in size—3 ½ in. in diameter at the front and 4 ½ in. in length when focused at infinity.

The entire front portion of the lens turns during focusing. The knurled

focusing ring permits extremely fine adjustments. Meters and feet markings are extremely large and legible.

The closest focusing distance of the Voigtlander Zoomar normally is 4 ½-ft. Unlike other lenses for single-lens reflexes, it cannot be used with extension tubes for closer work. However, by using supplementary close-up lenses which will be available, a close focusing distance of 10-in. will be possible. Of course these lenses do change the actual focal length of the Zoomar but the close-up picture is achieved.

The zoom control is ingenious. A collar surrounds the narrow section of the lens tube. With the collar forward you are in the 82mm position. By pulling backwards you reduce the focal length, finally reaching the 36mm position. Three rods attached to the collar move the interior lens elements and act as cushioning pistons, preventing any jerky movement. The barrel underneath the collar is marked with the intermediate focal length settings of 40, 50, 60, and 70mm although you can stop the collar at any point between these settings. With the lens tested, maximum sharpness was achieved at the longest focal length, 82mm. Definition at full aperture equaled the performance of a good standard 80 or 85mm lens of the same speed. At f/4 sharpness increased and held splendidly down to f/22. As the lens was used in shorter zoom positions, sharpness at full aperture decreased slightly. At the 36mm position, the least sharp point, definition across the entire field equaled that of an acceptable wide-angle lens of the same focal length and maximum aperture. By stopping the lens down slightly, definition again increased.

The lens has a moderate distortion in its two end positions. Distortion does not influence the resolution or sharpness of the lens in any way, but causes straight lines towards the edge of the field to be curved slightly inward (pincushion distortion) or slightly outward (barrel distortion). In the

(Continued on page 92)

MODERN TESTS

(Continued from page 91)

wide angle position distortion is hardly noticeable, while in the telephoto position it is not objectionable unless photographing straight line subjects such as tall buildings. It cannot be noticed when shooting people.

The zoom lens produced images with a look of depth and roundness and with less contrast than say, the 50mm f/2.8 Skopar standard lens of the Bessamatic against which the zoom lens was compared. If you prefer a more contrasty image, proper choice of film, exposure and development may give it to you.

Should you think of the zoom lens as an accessory lens or as a prime lens allowing you to discard other focal lengths covered by the zoom?

This will be a personal question. Besides the fantastic advantages of the zoom, the pictures made with it are certainly satisfactory in quality. By taking outstanding examples of individual focal-length lenses you could perhaps find sharper pictures at specific focal lengths. However, we feel the zoom quality far outweighs the slight increase in overall sharpness you might get with conventional lenses. (Actually, we have seen many unsharp wide-angle shots made with prism reflexes. These are often caused by the photographer's inability to focus sharply in the wide-angle lens' great depth of field. With the zoom lens, you focus at 82mm then move the zoom back to 36mm and you have a really sharp shot.)

The automatic diaphragm on the lens worked beautifully with the Bessamatic, showing a full aperture for focusing, closing when the shutter release was pressed and reopening when the film was wound. Although we assume the zoom lens will be made available in automatic mount for other leaf-shutter single-lens reflexes, it isn't available at present. Just about any focal-plane shutter reflex camera can use the semi-automatic model, however. The same lens fits all cameras. If you switch from one make of singlelens reflex to another the owner can easily change the adapter by following instructions. The automatic diaphragm works through a cable from the lens. The cable screws into the shutter release of your camera. There is a button on the camera end of the cable. As you press the button the diaphragm stops down and then the camera shutter goes off. You must recock the lens to full aperture by moving a lever on the lens mount-a very efficient universal sort of answer to how to fit the most cameras with one lens. The automatic and semi-automatic lenses are optically identical.

A great number of optical problems have been overcome in this lens. It is a splendid achievement. It zooms—what other still lens does?—H. K.

ANSCOMATIC PROJECTOR, 35MM TO 23/4 x 23/4 SLIDES



Specifications: Ansco Automatic slide projector for cardboard, glass or plastic mounted 35mm, 828, 127 super slides, half stereo, and 23/4 x 2% slides. Operation: Fully automatic, semi-automatic, and manual slide changing. Illumination: 500 watt. Lens: 5 in. f/3.5 projection lens with built-in diaphragm for varying light intensity. Other features: Standard TDC type slide tray. "Jet Stream" cooling system. Slide panel and entire control panel is illuminated. Unit is made of die cast aluminum. Vertical and horizontal adjustments. Price: \$119.50. Manufacturer: Ansco, 40 Charles St., Binghamton, N. Y.

The Anscomatic is basically an automatic slide projector for 35mm, 828 and super slides.

For automatic or semi-automatic operation, just place the slides in the standard TDC type slide tray (no special individual slide holders are necessary), push a couple of buttons on the control panel and off you go. On automatic, the slides may be changed at an interval of about 5 to 60 sec. Just set the timer dial and the Anscomatic changes the slides by itself.

Half stereo and 2 % square slides must be projected in the Anscomatic built-in manual changer—they're placed inside a slot at the top of the projector. To eject—turn a wheel and

they leave the projector through the same slot.

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The Anscomatic's tilting device is unique. You can raise and even lower the screen image by turning an elevation knob. If the horizontal alignment of the image on the screen is tilted to one side or the other (floor might be sagging, or one of the projection table legs might be too short), you can straighten the image by turning the "tilt" wheel. Tilts, raising, lowering—Anscomatic has a "floating" action.

You can control the room light with the Anscomatic. Plug the light cord into the projector. When you start showing slides, a switch inside the projector automatically turns out the room lights.

With automatic, semi-automatic, and manual operation, the Anscomatic worked like a charm. All but one slide size were illuminated evenly and with all the advantages of the projector's 500 watts of potential visual energy processed through an extremely efficient condensor and lens system. Incidentally, the condensors may be removed easily for cleaning if necessary. The 23/4 square slides are somewhat too large for the Anscomatic's system. Ansco made it possible for the projector to accept these larger slides in addition to the basic 35mm format. Since the system has been designed primarily for 35mm, the projector doesn't show the large slides with over-all even illumination or sharp-

After bending a cardboard mounted 35mm slide in half and then returning it to about its original shape, we placed it in the projector. It did jam the mechanism, but we simply unjammed it by opening up the projector (loosen one knob and the top can be folded back) and pulling the slide out. Nothing harmed, except the slide we had folded in half. We also tried to project two slides at the same time. It was easy to get them into the Anscomatic, and it was just as easy to get them out—neither projector nor slide was harmed.

The Anscomatic is dependable, easy to operate, and it will take just about every slide size except lantern slides—What more can you ask?—E. M.

OPTA-MATIC PROJECTOR IS 40 DEGREES COOLER

Specifications: Opta-Matic semiautomatic slide projector for 35mm, 828 and superslides. Lens: 4 in. f/3.5 coated Optacor projection lens. Other features: air circulation system cools critical points of the projector including front and back of the slide. Projector housing is made of Marlex high density polyethylene. Price: \$49.95. Manufacturer: Optics Manufacturing Corp., Philadelphia, Pa.

The Riviera blue Opta-Matic projector, set up for practical projecting in our blue-green studio, went fine with the decor. We not only admired its good looks; we also projected slides with it. In fact, we projected a few hundred color slides—36 at one slide viewing, changing them very rapidly; 36 at another viewing, changing them at longer intervals; and then a hundred at slow intervals and another 250 changed very rapidly.

This "break down" test revealed many interesting facts about the Opta-Matic—good and bad—and here they are:



The Opta-Matic is semi-automatic. We loaded 36 cardboard mounted color slides in its Readymatic Changer (it won't take glass mounted slides), plugged in the electrical cord which automatically turns on the blower, flipped the projector's light switch, and manually pushed and pulled the slide changer. The first slide was the only one which we had to focus. The blower system kept all 36 slides cool enough so that they didn't "pop" out of focus even once. However, we found that all the slides will be in focus only if they are all one kind. For example: if they're all Kodachromes, or Anscochromes, or Ektachromes, they'll be in focus. Mix up these slides and you'll have to focus just about every time you change from one type to another. The reason-most mounts and even the films themselves are of different thicknesses. Therefore, the slide will be situated at a slightly different plane when you switch from one to the other. And when the plane changes—so does the focus. Only one slide jammed the operation during our test. However, we discovered that the Opta-Matic was not at fault. The slide was warped. We released it easily and went on with the test.

The 300-watt light output of the Opta-Matic is brighter than many other projectors of the same wattage we've tested. More important, the Opta-Matic's light coverage was amazing. There was just a slight amount of light fall-off at the corners of the screen. We also projected 1 % x 1 % superslides and found corner to corner coverage more than adequate.—E. M.

24MM WIDE-ANGLE FOR 35MM REFLEXES

Specifications: 24mm Isco Westrogon f/4 Super Wide Angle Lens.
Mount: Automatic diaphragm for
Exakta only. Price: \$149.50. Importer: Exakta Camera Co., 705
Bronx River Road, Bronxville 8,
N. Y.

When the first 28mm lens was introduced for single-lens reflexes, I was amazed at the rather large size of the front lens element. "In order to make a single-lens reflex wide-angle lens, we have to use a retrofocus or inverted telephoto lens formula," one designer explained. "The retrofocus principle calls for a large front lens element. The greater the focal length for any given aperture, the larger the front element must be. We could make an even wider lens than 28mm but the front element would achieve quite a size."

Well, here it is, eight elements worth of 24mm retrofocus optics with a front overall mount diameter of 7 ½ in. But the lens, available only in an Exakta mount, is quite sensational. Aside from the weird perspective tricks that can be made, the wide angle (80°) shots are truly astounding. Definition is best at f/5.6 or smaller. In an emergency the f/4 aperture can be used but the corners will vignette and lose definition, particularly if you're shooting color where there's little exposure latitude.

For the serious amateur or professional who considers the singlelens reflex his principal 35mm camera, this lens, despite its size, is an extremely important tool. The Isco automatic diaphragm, which shuts slowly to any aperture as you press the release button and opens again when pressure is removed, works faultlessly.

Warning: the great depth of field even at full aperture makes the use of a split image rangefinder on the ground glass almost a necessity if you want the exact point of sharp focus.—H. K.

W.A. FOR TOPCON: F/2.8 AUTO-TOPCOR

Specifications: 35mm, 7-element wide-angle lens. Aperture range: f/2.8-f/22. Min. Focus: .8 ft. Price: \$124.95. Importer: Tokyo Optical Co., 521 Fifth Ave., New York 17, N. Y. Distributor: Chas. Beseler Co., 219 S. 18 St., E. Orange, N. J.

Designed for the Topcon single-lens eye-level reflex (which is authoritatively built) the wide-angle Auto-Topcor is authoritative and lightweight. Extended aperture range (to f/22) permits adaptability to superfast films, and bright yellow and white markings -for feet and meters respectivelyare clear and readable. The Auto-Topcor appears to be a retrofocus type wide-angle—that is, an inverted telephoto which gives a wide-angle effect. Its pictures: overall sharpness corner to corner at the widest opening. Its outstanding feature: a button, adjacent to the shutter release, which, when pushed, allows you to see the depth of field for the aperture being used. For those who are accustomed to winding film and cocking the diaphragm as standard procedure after every exposure, this is certainly a convenience. And, although the Auto-Topcor is semi-automatic, the cocking lever for opening the diaphragm falls just under your left forefinger on the top side of the mount.—D. J.

TWO FAST, LONG LENSES FOR EXAKTA

Specifications: 180mm f/2.8 Tele-Iscaron lens in preset diaphragm, 135mm f/2.8 Tele-Iscaron in automatic diaphragm, both for Exakta. Price: 180mm, \$200; 135mm, \$189.50. Importer: Exakta Camera Co., 705 Bronx River Road, Bronxville, N. Y.

The trend in long lenses for singlelens reflexes is towards larger apertures. These two German-made Isco lenses in handsome black heavily knurled mounts with white numerals certainly reflect it.

The 180mm Isco is a true tele lens, while the 135 is of a long focal length formula. By employing an exceptionally light mount, the manufacturer has made it possible to hand hold the 180. (For a great photographic sensation try shooting portraits at the close focusing distance, slightly under 6 ft.)

The 135mm Isco has an automatic diaphragm which closes when you press the button release on the mount and automatically opens when pressure is released. If the automatic diaphragm system has a resemblance to that on Schneider Tele-Xenar lenses for the Exakta, it's not surprising since the Isco plant is part of the Jos. Schneider & Co. optical works. The Isco 135, incidentally, focuses as close as 5 ft.

Optically, both lenses performed in a similar manner despite the fact that the 135 is a long focal length lens and the 180 is a tele design. At full aperture, definition was adequate, very

(Continued on page 158)



"80": Load it with

You won't believe it-until you try it...

To demonstrate the incredibly easy loading of the new Kodak Signet 80 Camera, we twisted the arm of a Rochester camera-shop manager and coaxed him into doing a one-hand blindfold demonstration. It's something to see! The camera almost loads itself—just one of the many reasons we call it "the expert's camera that does everything so easily."

And this is how it's done



2. Feel around, find latch, open it with nail of index finger while thumb presses against camera base. Back unlatches, ready to lift. Even blindfold, the loading takes less time than the telling.



3. Lift camera back—it's hinged—and swing it over completely out of the way. You have complete access to inside of camera—don't have to coax film down into a narrow slot.



4 Pull out rewind pin. Slide magazine into position. It practically falls in by itself. Check with finger tip to see that both ends of magazine are down. Push rewind pin back into position.

Thoroughbreds all...in 35mm

Some 35mm cameras, like some horses, run their best race on a fast track. Others like the rain. Some want an expert jockey, while others don't care who's up.

Four thoroughbred 35mm cameras that have earned a lot of attention for their versatility are the Signets, out of Kodak. They carry the numbers 30, 40, 50, and 80.

"80" is the pace-setter... the choice of experts. Responds well to photographers who expect a lot from their gear—as you can see from the loading demonstration shown above.

What else is good about the Kodak



Signet 80 Camera? Rapidly interchangeable lenses, for one thing. Normal 50mm f/2.8, complemented by a versatile 35mm wide-angle lens, and a far-reaching 90mm telephoto. All with Kodak rare-element glass for superior correction and detail.

Naturally the Signet 80 has a built-in

meter-accurate, rugged, that measures both incident and reflected light for films from 10 to 6400 ASA. And precise focusing down to 21/2 feet with all lenses. And a modern one-to-one finder with projected bright-line corners to define exact coverage. And a precision shutter synchronized for all types of flash. And rapid thumb-flick film advance. And handsome styling, so that you're proud to wear your Signet 80. And a whole slew of other expert's delights, including specialized aids for ultra-close work, copying, and photomicrography. Check for yourself-same time you find out about the "80's" fast one-handed film loading.

Now, the Kodak Signet 50 Camera. It comes ready for action, complete with flasholder and 3- and 4-inch reflectors... photoelectric meter built in, EVS linkage, fast f/2.8 lens, shutter to 1/250, and more besides.

The versatile Kodak Signet 30 Camera is a thrifty counterpart to the Signet 50—lacks only meter and flasholder, is otherwise identical. Finally, there's the Kodak Signet 40 Camera with its rugged die-cast construction, smooth sure rangefinder, structural unity and precision.

What these throughbreds have in common, aside from their 35mm-ness, is Kodak quality and that certain appeal you get only when a camera is designed by people whose life is devoted to photography.

Useful backs

The fronts of Kodak Flasholders speak for themselves... brilliantly... with the mirror-finish reflectors that give you an extra-brilliance bonus in every shot. But the backs don't just sit there, holding up the front. Each back carries an efficient exposure guide or computer that puts the flash data where you need it—right in front of your nose, or close by, depending on how you hold the camera.

Some of these guides are simple tables. Others are ingenious easy-to-read dial or slide devices.



Here's the one on the Kodak Generator Flasholder. Covers all the popular

one hand, blindfold!

1. Enterprising young advertising agency executive (A) puts blindfold on adventurous camera shop manager (B) at shop counter. Signet 80 Camera stands on counter, lens down, back closed and latched, 35mm film magazine alongside (see picture story below).





5. Lift film tip, and slide it into the big slot. That's all. No hooking over anything...no threading into a narrow slot ... no checking to be sure any sprockets are engaged. Now...



6. Close the camera back. Stand the camera on its end, work the thumb-lever until it stops. Your first film frame is now in position...shutter and exposure counter automatically set.



Peel off the blindfold, start shooting. Big point is that you load so easily...so swiftly...you don't miss pictures. Now go try it yourself. For other Signet 80 features, see below.

midget bulbs and all the most popular Kodak films. Others are comparable. But the big point is—the guide is *right there*, whichever Kodak Flasholder you buy. Which is just one more reason your Flasholder should be from Kodak.

Right now, our first choice would be the Generator Flasholder, which never needs batteries, is a modest \$13.95 with Kodalite fitting, \$14.95 with shoe fitting for mounting on your camera's accessory clip.

The lure of Panalure

You shoot Kodacolor Film to get color prints, of course—for your album or your Aunt Clara's bureau, or your living room wall, in appropriate degrees of gorgeous enlargement.

But many of your color negatives—on Kodacolor or Kodak Ektacolor Film—will produce handsome black-and-white enlargements, too. If you have the right paper...panchromatic paper.

We make panchromatic Kodak Panalure Paper specifically to yield rich, beautifully balanced black-and-white prints from color negatives. Panalure paper maintains the correct tonal relationship between lips, eyes, hair, blue skies, red barns, and so on—simple because it's panchromatic.

Also, like "pan" film, it permits the discriminating user to alter the "natural" balance of the print by using filters. Even to use regular "shooting filters" to change or heighten emphasis—a red Kodak Wratten A Filter to darken sky and beef up clouds, for example.

Kodak Panalure Paper comes in standard sizes, double weight. The E surface is white, lustre, fine-grained. Image tone is a good warm black; but you can tone—brown, selenium, even gold.

Your dealer has Kodak Panalure Paper now. Try it,

No cream and sugar

The gelatin used in making the emulsions on Kodak films and papers is much like the gelatin in your dessert or salad. They're both edible. But there the difference stops...photographic emulsions are more sensitive than people.

We get our photographic gelatin from a subsidiary of ours, Eastman Gelatine Corporation in Peabody, Mass. They're so fussy they even check the area in which the animals they use came from; because what the animals eat affects the chemical composition of the gelatin—and gelatin is no mere inert medium. It has several jobs to do.

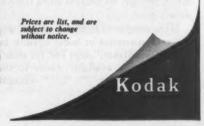
All this may seem like a lot of bother, but it's one of the reasons why you get consistent results from Kodak film, roll after roll; Kodak paper, sheet after sheet.

The word about Poly

In a recent Bulletin, we said of Kodak Polycontrast Paper: "The word is spreading... and the word is convenience plus quality."

Word or words, singular or plural? Okay either way, so long as you *get* the word about this wonderful variable-contrast enlarging paper:

The word is Polycontrast.



EASTMAN KODAK COMPANY, Rochester 4, N.Y.

MODERN'S MOVIE TECHNIQUES

3 WAYS TO LIGHT MOVIES

IF you've already shot a few rolls of indoor movies—and have been disappointed—you probably realize by now that there's no quick solution to lighting.

But don't throw that barlight into the closet and forget it. With a little help—and a few more lights—it can do a good job of lighting your films. Besides, there's nothing like a barlight for those shots that require quick action—something the baby does, a news event, or a sports contest, for example. Visual interest overcomes any defects in lighting. It's when lighting plays an important part in emphasizing a film idea that the barlight sometimes needs help. You may want to convey a mood or shoot a broad scene with a lot happening in it, or an extreme close-up. There's where a few lighting techniques added to your barlight can make the difference.

Take a look at the second series of illustrations (opposite) showing a group of children playing in what might be anyone's living room. The game is an active one and covers a large area. A barlight alone would mean swinging camera and barlight around dizzily or standing so far back that the lighting would be uneven—with an overexposed foreground, underexposed background, and unwanted shadows. You can apply the same techniques to a birthday party or any other large group seated around a table, or performing a series of actions where clear detail is required.

On the other hand, you may want to express a mood or create an available light effect—as in the first set of illustrations. Here the lighting is stylized to produce a shadowy effect showing enough detail to make the audience wonder what's going on.

In the third series of illustrations, showing the close-up, we use a spot to add interesting highlights to the child's hair. But you just can't use a spot for action footage. Its beam is much too concentrated to do any good.

If the number of lights we suggest seems too much for your apartment or home circuits, take a look at "The Movie Maker," page 148, for some hints on how to utilize your available power to the maximum.

-ALBERT L. MOZELL

LIGHTING FOR SPECIAL EFFECTS



Primary purpose of mood lighting is to elicit a definite response to a scene from the audience. Here youngsters are busily involved in making the tools for a game. Basic technique is to use enough light for adequate exposure, but also to use shadow detail and highlights

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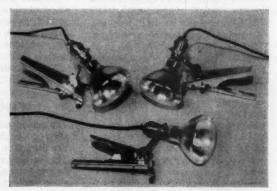
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to impart the mood. The main light (1) spills across the front of the scene, edge lighting the boy in the foreground and also lighting faces of children around table. The No. 3 light partially fills in shadows and supplements other background light (2).

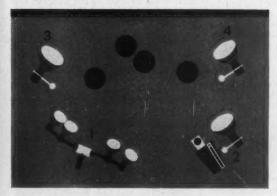


Three photo floods are enough for many different types of mood lighting. The Gator Grips hold to almost anything—chairs, tables, light stands, or doors, for example. Thin brads in wall hold lights over scene.

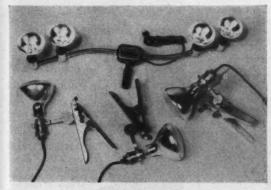
LIGHTING THE OVER-ALL SCENE



Where there's a great deal of movement in a medium or long shot the lighting should be uniform over the entire area where action is to take place. It gives your subjects more freedom to be themselves and the cinematographer needn't worry about unwanted shadows



suddenly cropping up. Bouncing the barlight off white ceiling (1) provides even diffused lighting. A direct flood (2) supplies additional light needed for adequate exposure and the addition of background lights (3 and 4) assures good lighting over entire scene.



We've only added a barlight to the three floods and Gator Grips. The barlight can be mounted on a tripod or fastened to a light stand. If you shoot color—ceiling must be white.

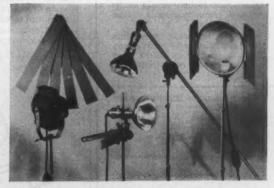
CONTROLLED LIGHT FOR CLOSE-UPS



Lights for close-ups are more numerous for greater control over effects. White walls can be dull as background. Interesting shadows can be added by making a cukularis (see below) out of stiff cardboard or wooden dowels held together by a nut and bolt. Using 12 in. reflector,

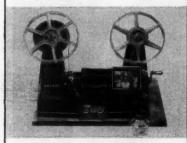


with photoflood bulb provides maximum control over main light (1). The doors allow you to widen or narrow the beam as you desire. Reflector spot provides hair light while baby spot (2) creates shadows through "cooky" (4). Reflector flood (3) fills in shadows.



A boom supports the reflector spot and is mounted on a light stand. Baby spot, 12 in. reflector with barn doors, and three or four light stands provide good ratio of flexibility to practicability.

GUARANTEES BETTER 8mm MOVIES



KALART

Editor-Viewer Eight

with new

"DUAL-PURPOSE" SPLICER

Want to transform your "straight-from-the lab" film into a polished, entertaining movie that creates interest and excitement from start to finish? Just use the improved Kalart Editor-Viewer 8. It's the most convenient way to preview 8mm film action—to cut out blanks, blurs and poorly exposed sections—to splice scenes in story-telling sequence. Only a Kalart offers all these important features:

*Big, bright picture shown 12 times film size on ground glass screen. Precision optics and 30-watt lamp project movies in sharpest detail without flickering.

*Built-in splicer permits use of handy splicing tape or economical film cement. This new "Dual-Purpose" feature is found only on Kalart-made equipment.

*Single handle forward-reverse operation. Take-up speed is slow and smooth, rewinding is fast. Accommodates up to 400' reels.

*Convection cooling permits studying single frames indefinitely without overheating film.

*Complete in handy carry-carton with Craig Formula #7 Film Cement. See it at your photo dealer's when you pick up your next roll of film. Only \$39.50.

36-page Illustrated Booklet – packed with tips on how to improve your movies. Regularly 50¢. Only 10¢ with this coupon. Mail to Kalart, Plainville, Conn., Dept. M-7.

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KALART

TRAVEL

(Continued from page 44)

Moses suddenly appears offering to sell me a cocoanut.

Since you'll be around sand and the sea a great deal take along a blowera rubber ear syringe from the local drug store will do-to clean the sand off the lens and out of the interior of the camera. A camel's hair brush will lift out remaining sand without scratching the lens. Don't forget lens tissue, to get the sea air scum off the lens. On many islands you will find taxi drivers who are specialists in showing you the most photogenic views of the locales. Some even have their own Kodachrome slides to sell to non-confident photographers, and will give you quite accurate exposure data.

A final word is one on good manners. If you were sitting in your own back-yard and a stranger from another and much more wealthy land (let's say the moon), who spoke with an accent or a language different from yours, came along and snapped your picture without a by-your-leave, wouldn't you be indignant? Especially if you were wearing old clothes and your hair wasn't combed? Treat other peoples as you would like them to treat you.

Pricing poses

In some places (especially the cities such as San Juan or Montego Bay) you may find that the people expect to be paid for posing. One woman in Portof-Spain, Trinidad, frankly earns her living by posing for tourists with a huge basket of flowers on her head. A small coin (if it gets above a quarter, you're being taken) will usually do. If you are asking someone to pose for a longer period of time, adjust the fee accordingly.

You are, whether you know it or not, an ambassador wherever you travel. A camera to people in poor countries is as important a symbol of wealth as a diamond or a Cadillac is in the United States. You can make friends or enemies with it. You'll find it more fun to make friends and you'll get better pictures in the long run if you ask first, shoot later.—J. B.





An automatic darkroom aid that eliminates exasperating and wasteful test strips. Electronically selects the proper diaphragm aperture.





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CINE-VOICE II

16mm Sound-On-Film Camera

Shoot with Auricon Optical Sound-On-Film or the revolutionary new FILMAGNETIC Sound now being used by major Television networks!



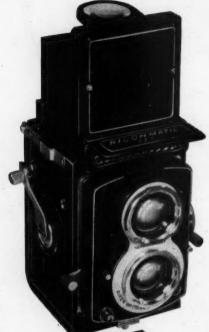
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The
JAPANESE
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INDUSTRY





RICOHMATIC 225

For the first time . . . a really complete Automatic Reflex priced to fit any budget, yet built to highest professional standards! New . . . crank advances film and cocks shutter in one sweep. New . . . built-in, extra-sensitive exposure meter reads directly in light values. New . . . choice of picture sizes with 120 or 35mm film. Famous, needle-sharp 80mm Rikenon f3.5 taking lens and f3.2 viewing lens. Exclusive Duo-Lever focusing. Cordless flash outlet shoe. New, improved Seikosha SLV shutter from 1 second to 1/500th and B. Brilliant, fresnel-type viewing screen. New, complete depth-of-field table.

And it costs only \$9995 plus case and 35mm adapter.

New

RICOH Wide 2.4

Newly designed 35mm coated f2.4 lens takes in 88% more area than ordinary 35's, is 26% faster! Focusing is quicker, as close as 2 feet, with tremendous depth of field! But there's more to this beautifully compact camera ... new Seikosha MXL shutter to 1/500th second, MFX flash synchronization; coupled rangefinder combined with bright-frame viewfinder; rapid advance lever and fast rewind crank.

Only \$7995 plus case.



500

Budget-priced, custom quality, luxury features. F2.8 lens; 1/500th sec. synch. shutter; cpld. rangefinder; rapid rewind crank; Triggermatic action.

\$69.95 plus case.



Diacord L

Top quality 2¼ x 2¼ reflex camera. Built-in direct reading exposure meter; Duo-Lever focusing; f3.5 ctd, lens; 1/400 MX synch. shutter.

\$65.00 plus case.



Diacord o

Consumer "checkrated" for excellence and valuel Sharp f3.5 lenses; 1/500th sec. synch. shutter; Duo-Lever focusing; fresneltype viewing screen.

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BEOM

Most exciting '35' you've ever seen! Built-in exposure meter reads direct light values; brightframe combination range-viewfinder automatically corrects for parallax; 6-element 45mm Rikenon f1.9 lens; exclusive Duo-Lever focusing; Seikosha SLV shutter to 1/500th; exclusive Triggermatic advance; fast rewind crank; MX synchronization; self-timer . . . in short, it's got everything!

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SUPER RICOH

OUTFIT Biggest 2¼ x 2¼ Reflex value ever offered! F3.5 coated lenses; 1/200th sec. shutter; flash synch; adapts to 35mm and 127 film; critical magnifier; life-size ground-glass viewing; eye - level action finder. Camera, case and flash

\$29.95 complete!



OUTFIT

Amazing 35mm camera with 'pro' features. F2.8 ctd. lens; cpld. rangefinder; synch. shutter to 1/300th; rapid wind lever.
Precision built; perfectly styled and
Ricoh-low priced!
Camera \$39.95. case \$8.50, flash \$5.95.

\$54.40 complete!



ck-cel-uel

Smaller than many 35's, yet takes jumbo slides with reflex-ease on 127 film! F3.5 ctd. lenses; synch, shut-ter to 1/400th; selftimer; fresnel - type viewing screen.

\$42.50 plus case.



Golden 16 OUTFIT

Smaller than a pack of cigarettes! Interchangeable f3.5 lens; 1/200th sec. synch. shutter; rapid wind lever. Camera, flash, case, viewer, film, bulbs, filter, jewel case.

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is automatic?



ASAHI PENTAX 'S' Here's the PENTAX that stood the single lens reflex world on its ear! Most compact of all, incorporates the amazing instant return mirror that ends photographic blackout! Asahi Takumar 55 mm f2.2 5-element lens, 1 sec. to 1/500, M and X sync... interchangeability with numerous other lenses from 35mm to 1000mm, full range of accessories. \$195.

ASAHI PENTAX 'K' This is the PENTAX for the perfectionist. the 'K' adds the marvel of internal automatic lens stop-down to the shutter trip mechanism... and still features that instant return mirror too! Improved focal plane shutter... 1/1000... improved viewfinder offers bulls-eye focusing... interchangeable lenses, full accessory line. New 35mm f2.3 wide angle and 105mm f2.8 lenses are automatic too! Only \$249.50.

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News of the MPDFA convention at Philadelphia seems most significant to me, for at this show new cameras are exhibited from all over the world. Of additional significance—and a fact that gives me great personal pleasure as well—is that I may take this opportunity to tell all people in the camera industry and, in fact, all photo enthusiasts about Japanese cameras!

As you know, our cameras have a long and notable history and are well accepted by everyone for quality and performance. As a matter of fact, today they are amongst Japan's leading export items.

A great many Japanese deserve praise for the fine showing our optics have made. But in particular, I'd like to pay homage to those Japanese engineers whose constant and inspired efforts have improved the quality of the camera bodies, and the mechanical functions as well.

The Japan Camera Inspection Institute deserves a tribute, too. For another powerful factor in maintaining the high standards of Japan's optics is the very efficiency of the optical checking system. This includes not only the testing procedures that are carried out at the manufacturers' plants, but also the inspection by the JCII. Only after the Institute has scrutinized and passed on them may Japanese cameras and lenses leave the country.

Because of such elaborate safeguards, photographers everywhere can use our equipment with complete confidence at all times.

It is my earnest desire that on other occasions as at Philadelphia—friendship between nations may be enhanced through photography, with the help of the Japanese camera industry.



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CANON VI 35mm CAMERA CANON LENSES, world's CANON CINE 8 CAMERA On all counts, rates No. 1 among the "Big 3"! Brightest 3-position viewfinder; stainless steel shutter curtain; fullframe rangefinder image; coupled exposure meter; fastest trigger action. With choice of fast lenses, from \$289.00.

"rare earth" optical glass elements in revolutionary optical designs, Fastest speeds. Full range of focal lengths from 25mm wide angle to 800mm

Priced as low as \$69.50.

with exclusive "Select-A-View" finder that is bigger, brighter and easier to use than any

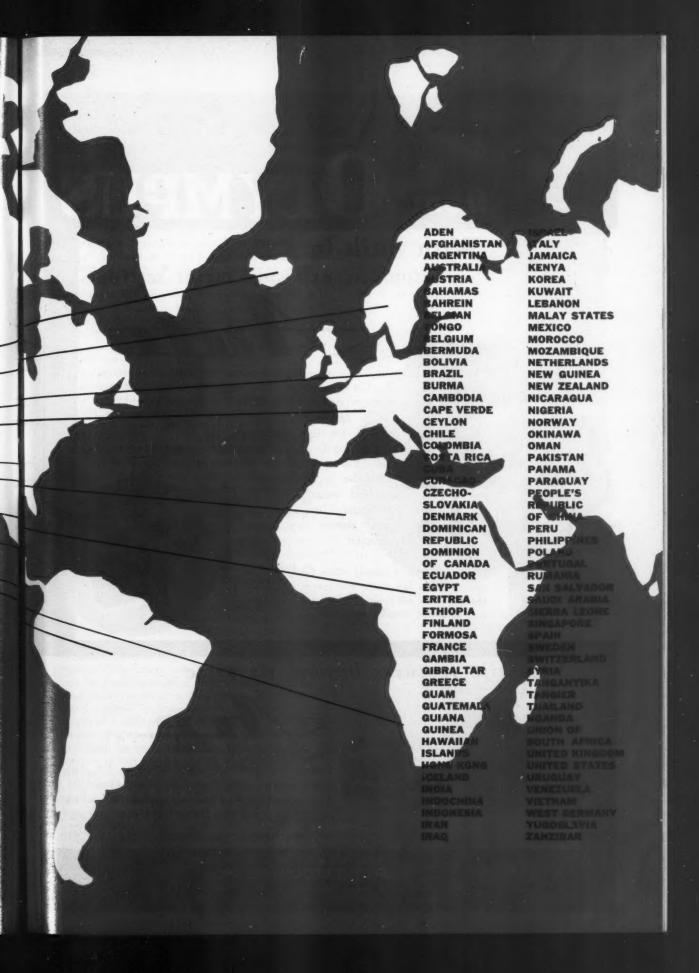
all lenses.

As low as \$139.50, with lens.

CANON BINOCULARS embody the same high standards that set Canon cameras changeable eye-cups for those who wear glasses. With case. From \$59.50 (plus F. E. tax).



96 LANDS LOOK AT THE **WORLD THROUGH JAPANESE CAMERAS**



2 New Exclusive Cameras

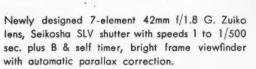
from OLYMPUS

With built-in automatic exposure meter setting



This new model gives automatic exposure settings. A built-in exposure meter coupled to the lens diaphragm makes this possible. First, the shutter ring (A) is set to the desired shutter speed. Then, by turning the lens diaphragm ring (B) the exposure meter needle (C), visible in a window on top of the camera, is set to the marker and the correct

exposure is automatically secured instantly and effortlessly. Lens diaphragm and shutter are cross coupled.





Versatile features beyond its price





This versatile and economy model meets the needs of both amateur and professional photographers. The ACE has interchangeable E. Zuiko lenses—standard 45mm f/2.8 lens, wide angle 35mm f/2.8 lens and telephoto 80mm f/5.6 lens—Copal SV shutter with speeds 1 to 1/500 sec. plus B & self timer, coupled rangefinder and bright frame finder.



Ask your dealers or write for booklet SCOPUS BROCKWAY, INC.

404 Fourth Avenue, New York 16, N.Y. ORegon 9-7490 Canada: W. Carsen & Co., 31 Scarsdale Rd., Don Mills, Ontario It is an excellent comment on the healthy competitiveness of the photographic industry that new cameras from all over the world are seen at the annual Master Photodealers and Finishers Association Convention in Philadelphia (March 22-26). It is similarly praiseworthy that both the trade and buying public have an opportunity to evaluate these remarkable products.

Needless to say, we Japanese manufacturers are impressed with the importance of the Philadelphia Convention, and are happy to participate in it. Just look at the strides that have been made in advancing photographic technics in recent years! It is not unusual to find that what was perhaps topnotch a few years ago, may no longer be considered as such today. In fact, we've even witnessed the disappearance of some of the industry's former leaders. This, too, is another reason why camera industry people always look forward to the MPDFA event.

In conjunction with this, it is our great pleasure to present the Japan Camera Special Section, because it will bring your readers up-to-date with the present situation of the Japanese camera industry. Certainly I, for one, am honored to be part of it.

The Japanese camera industry is by no means a young one! And after years of painstaking research and experience we have improved our cameras to the degree that their quality and performance have now put them in the ranks of leading cameras made.

Just why has this come about? First, Japanese lenses are universally acknowledged as excellent. The optical glass—raw material of the lenses—is an entirely Japanese product. The famous sharpness of our lenses is due to the outstanding optical properties of this glass, and the unique speed of Japanese lenses is similarly acclaimed. Indeed, several top-notch cameras boast f/1.1 or f/1.2 lenses. Even popularly priced 35mm cameras, which were not hitherto equipped with fast lenses, now have fast f/2 or f/1.9 optics. Small wonder, then, that Japanese cameras have won praise for their optics!

Second, there is great respect for other features: rigidity of the camera body, brightness of the finder, and for Japanese shutters, which compare with the most efficient produced in the world. Almost all focal plane cameras in Japan are now equipped with speeds of 1/1000 sec., while cameras with between-the-lens shutters have peak speeds of 1/500 sec. Therefore the photographer can take sharp, clear pictures of any moving object, wherever there is

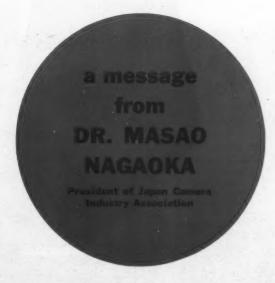
sufficient light.

15

In line with the trend begun last year, amateurs and beginners alike are able to take pictures automatically, for current Japanese cameras have either built-in exposure meters or coupled ones. If you look, you'll find improved models available in the United States camera stores now. It is fair, then, to cite the praise that our cameras have won.

And now, a final point: prices. In consideration of the potential buyer, we are giving careful attention to price stabilization. Not only is the Japan Camera Inspection Institute following a strict, uncompromising policy in approving all mechanisms before passing on them, it is checking on performance, durability and lens resolution as well. And, as you can imagine, such a campaign as that made by the Japan Camera Industry Association is made at no little sacrifice and expense. Yet, in order to maintain the reputation of our fine cameras, it is imperative to carry out such extensive measures. While doing this, we will deeply appreciate your recognition of our efforts.





Value has made YASHICA

the most talked-about name in photography



Imaginetake br
rect bor
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"zoom"
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With no Yashin

Thrillir indoors ing f1.9 finder, posure load, 16

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Value is the ideal combination of price and quality

There is so much value built into every Yashica, you can buy two for what you'd expect to pay for one camera of comparable quality.

Examine the wide variety of Yashica cameras-movies and still-and note how each meets a specific level of interest-a specific need. There's a Yashica exactly right for novice, casual snapshooter or serious amateur, family movie-maker or color-slide enthusiast. And, there's a Yashica exactly right for every purse.



YASHICA Turret-8 with f/1.4 Yashinon lenses

Imagine-a camera with lenses so fast they take brilliant indoor color movies with indirect bounce-light. Yashinon f/1.4 lenses are available in normal, wide-angle and telephoto. Features include: twin-lens turret; "zoom" type-finder; 7 governor-controlled speed from 8 to 64 frames-per-second; single frame exposures and drop-in loading. Yashica Turret-8 with 13mm normal f/1.4 lens,

\$79.95 With normal and 38mm telephoto f/1.4 lenses, \$119.90 Yashinon 6.5mm f/1.4 wide-angle lens only, \$44.95



YASHICA 44

The most exciting color camera of them all! This small-size twin-lens reflex delivers 12 super-size color slides from a roll of 127 film, and takes sparkling jumbo prints in color and black-and-white. Matched f/3.5 lenses; synchroflash shutter with speeds from 1 sec. to 1/500 sec. plus 'B'; brilliant field-lens focusing; single-stroke film transport; focusing magnifier; sports finder.

\$59.95

Leather eveready case, \$10.00



YASHICA-MAT

Ruggedly constructed for years of dependable service, and fully automatic! A single-stroke crank advances the film, sets the shutter and prevents double exposure -automatically! Features f/3.2 viewing lens, f/3.5 taking lens; 9 shutter settings to 1/500; premium field-lens focusing screen; built in flash synch and delayed action timer.

\$75.50

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YASHICA 8

Thrilling family movies Beginner's delight. Has indoors and out. Focus- fine etched focusing ing f1.9 lens, zoom-type finder, single frame ex-

\$49.95



YASHICA A

screen, f3.5 lens, four shutter speeds to 1/300 posures, easy drop-in sec. plus B and built-in load, 16 frames-per-sec. flash synchronization. sec. plus B and built-in

\$29.95 Leather case \$6.00



YASHICA C

Semi-automatic film transport with autostop, f3.5 lens, field-lens focusing, flash-synch shutter, speed range. 1 sec. to 1/300, and self timer.

> \$46.50 Leather case \$8.00



YASHICA LM

Has same lenses, shutter, self timer and semiautomatic film advance features as on Yashica C, but with built-in sensitive exposure meter.

> \$59.95 Leather case \$10.00



YASHICA 635

Convertible - uses 120 roll and 35mm films interchangeably, f3.5 lens, field-lens focusing, flashsynch shutter: 1 sec. to 1/500, and self-timer.

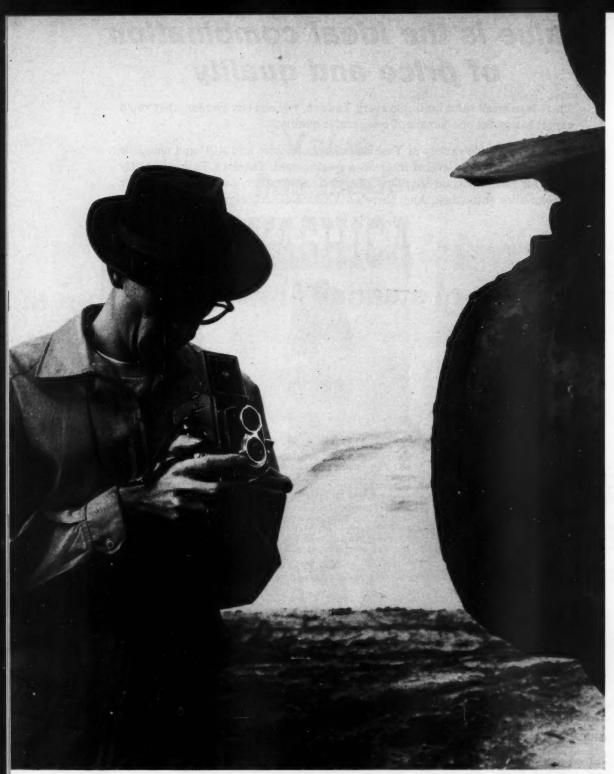
\$69.95 Leather case included

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Industrial photographer, editor and engineer Rix Beals of Mining Engineering magazine makes a shot with Minolta Autocord

The industrial photographer covers what is probably the broadest area of picture making in any profession. Often he is called on to shoot documentary photographs like the photojournalist, but his range also extends to making pictures through microscopes, performing aerial photography, studio photography, missile photography, photographing radar and other oscilliscope machines, extreme high speed photography. He's a jack of all trades and is necessarily a master of each.

The industrial photographer is often employed by a large corporation where he works in a photo department along with many other photographers and technicians. Sometimes, particularly in small companies, he may be the whole department himself. Other industrial photographers work on a free lance basis, obtaining employment to do specialized work which the in-plant photographer cannot do, or working for plants without photographic departments.

From the scope the industrial photographer covers, it's easy to see that his equipment must be varied and complete. It's too late to purchase photographic equipment after he receives an assignment. All the equipment he needs or may need must be already available, tested and checked, ready to go.

The 21/4 x 21/4 camera, and now even more the 35mm, is becoming a vital tool in industrial photography. Large plants are almost impossible to light sufficiently for photographic purposes even with the most modern electronic flash or flood equipment. Therefore, the photographer must often rely on existing illumination for not only his black-and-white photographs, but his color as well. Extremely sharp, capable optics with maximum openings large enough to permit existing light photography with color film are necessary. The Japanese photographic industry has been able to supply them in full-cameras with complete parallax correction so that no part of the vital industrial picture area will be lost, lenses capable of registering the complex machinery with full fidelity and sharpness no matter whether the shot must be made in black-and-white or color.

In addition, the industrial photographer is generally responsible for turning out the various audiovisual presentations which a company uses for advertising, promotion or educational purposes. These slide shows, which used to be made in the traditional $3\frac{1}{4}$ x 4 lantern-slide size, are now practically all produced in the smaller 35mm format of $1 \times 1\frac{1}{2}$ in. These must be projected in many instances to full auditorium screen size with every bit of the crisp detail showing. Again the quality of the

equipment, in this case, 35mm, which is used to make the slides, must be beyond any flaw, the Japanese photographic industry has manufactured the cameras and lenses which more than fulfill the job.

An alternate aspect of the industrial photographer's problem is his need for more than one camera of each type. Even a moderately small photo department will have six or so twin-lens reflexes and a like number of 35mm camera bodies with more than



one full set of lenses of varying focal lengths. By being able to purchase such cameras and lenses of top quality at reasonable prices, the industrial photo department can maintain sufficient quantities of equipment with both cameras and lenses in reserve as well.

In a vast photographic area, industrial photography, Japanese cameras and other related equipment were virtually unknown even ten years ago. It's truly amazing to see the quantity of Japanese equipment in use—equipment on which the great industrial plants throughout the country have come to depend.

TOP of the Japan Optical



Topcon R distributed by Charles Beseler Company will be known as "Beseler-Topcon".

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Industry





FEATURES OF ALL TOWN PRODUTCS

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based on our belief that no optical
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TOKYO OPTICAL MAIN PRODUCTS

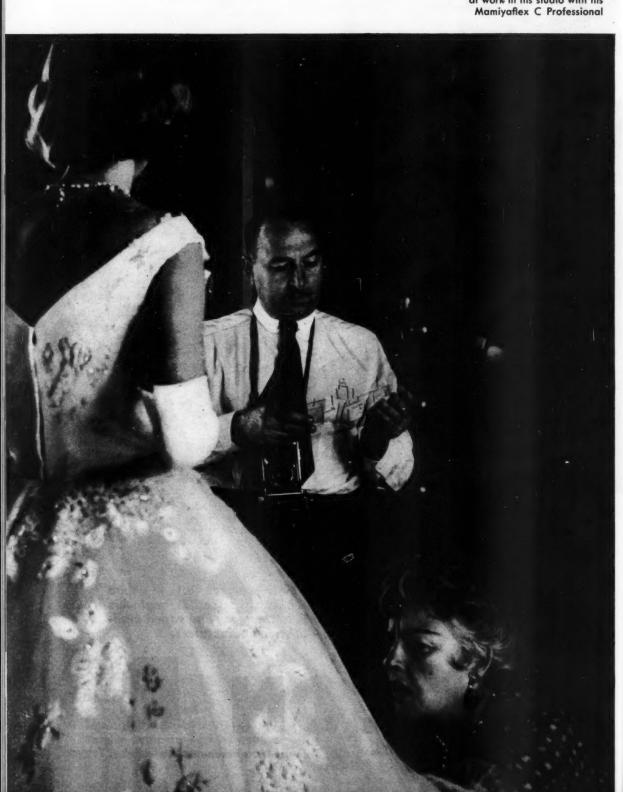
TOPCON Cameras
TOPCOFLEX Cameras
TOPCOR Lenses
MAGNA Binoculars
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MAGNA Microscopes
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TOKO Eye-Refractometer
TOKO Vision Tester
TOKO Chart Projector
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One of the largest, most modern and best equipped factories in Japan boasts of one of the greatest aggregation of optical scientists, engineers and craftsmen, whose combined experience in the many and varied products of the company is matched by few other manufacturers.

TOPCON R

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Commercial photographer Hal Reiff at work in his studio with his Mamiyaflex C Professional



No country turns out the profusion of photographic advertisements—in newspapers, on billboards, record cover albums, in magazines—as does the United States. These photographs are produced in incredible profusion by a vast band of advertising, studio and commercial photographers whose duty it is to glorify a product—make it look good enough to eat or to buy. Naturally, these pictures must be of the very top quality.

quality.

In rec

In recent years with the great improvements in lenses and film emulsions, the commercial photographer has been turning more and more to the smaller negative sizes— $2\frac{1}{4} \times 2\frac{1}{4}$, and now even 35mm. Yet he is demanding of these relatively diminutive sizes the same quality he obtained with his larger 4×5 and 8×10 equipment. After all, he must produce huge, almost mural sizes, blowups for his clients, enlargements with little grain and extreme sharpness. His color must be exact. A mistake, a faulty piece of equipment may mean an incalculable loss in time and model fees. Reputations are made and broken in the commercial world quickly.

The commercial photographer first adapted a "show me" attitude toward the Japanese equipment. He couldn't afford to experiment with untried equipment. And even if he heard reports that the equipment did work in the hands of competent amateurs, newsmen or photojournalists, it did not necessarily follow that the cameras or lenses or shutters would

be good enough for him.

The amount of Japanese photographic equipment now in use in commercial studios throughout the United States may perhaps be the greatest tribute to the Japanese photographic industry. Yet the equipment in many cases represents cameras and lenses which have been much needed in the commercial fields for some time. Today many studio photographers are shooting their most important pictures with Japanese twin-lens reflex cameras and measuring exposure with Japanese-made exposure meters designed especially for the studio photographer who uses a multiplicity of lights.

The Japanese manufacturer has been eager to listen to the practical voice of the working commercial photographer and respond to his needs. Now the studio photographer has such equipment as a twin-lens reflex with interchangeable lenses and extreme wide-angle lenses for his single-lens $2\frac{1}{4} \times 2\frac{1}{4}$ reflex, to cope with the many situations which previously were difficult to handle at all. And once the equipment is in the hands of the photographer, the Japanese manufacturer's representative is never very far away, eager to answer questions, hear comments, note suggestions for improvements. When a suggestion from one of these top men is made, action soon follows.

The Japanese manufacturer has never been afraid to make specialized equipment for the studio or commercial photographer even though the sales might be limited. The manufacturer has felt a genuine responsibility to the photographers using his

equipment.

Once the first commercial men began to use the Japanese cameras, lenses and exposure meters, the acceptance caught on. Certain pieces of equipment became almost standard items in every commercial studio throughout the land. The commercial photographer, from a doubting skeptic, had tried, been convinced and had finally become an enthusiastic promotor of Japanese cameras, lenses, meters, shutters. Today a good part of all those advertisements we see, believe or don't believe, are made with equipment manufactured in Japan.

World's first

NEW NOLTA V2 "Freezes" motion

Forget about angles, panning, peak action.



F:2 Lens: 6-element, rare earth-eliminates haze

Minolta "Autocord quality"-plus world's fastest shutter speed-only

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F:2 Lens: A proven Rokkor 45 mm, f:2, six element, rare earth, platinum pot lens. Special double coating eliminates need for haze filter. (Click stop setting f:2 to f:22.)

Automatic Parallax Compensation: Ultra bright Lumi-Frame in single window range/viewfinder, automatically moves to correct parallax. Focuses from 30 inches to infinity.

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Rapid Rewind Lever: Folding crank makes rewinding film fast-effortless.

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Special "color coding" shows that set at f:8 to f:22, you get a true 1/2000 and that set at f:4 to f:22 you get a true 1/1000.













SHUTTER SPEED

Revolutionizes Action Photography



1/1000 SECOND:

n

The entire boat, driver and markings are fuzzy -even with panning (note background). For children, pets, sports-or anything that isn't nailed down 1/1000 is a necessity. 1/2000 is a dream, and a must for the new fast films.



SECOND:

Both boat and driver are sharp. Even the markings are completely legible. At 1/2000 second you just sight and snap. No worries about angles or panning. (At 1/500 second you would get a hardly recognizable blur.)



Without any professional "tricks" to stop motion, you freeze child, hoop and expression—shooting as close as you like. (Note raised foot and hands.)



Even water gushing from hose is frozen by the V2's 1/2000 second shutter speed. (Note how the needle sharp f:2 lens shows each drop on the leaves.) For any scenic shot showing a waterfall, waves, etc., the V2 can make you look like a professional. And the results from a car or airplane are just short of fantastic.

MINOLTA CAMERAS • 150 BROADWAY, NEW YORK 38

Distributors - U. S.: The FR Corporation, 951 Brook Ave., New York 51, N. Y. • CANADA: Anglophoto Ltd., 889 Champagneur, Montreal 8, Quebec, Canada



News photographer Earl Seubert of the Minneapolis Star covers a game with his Nikon SP

Everyone knows what a news photographer looks like—or does he? Is the news photographer stereotyped with 4 x 5 press camera complete with flash, a slouch hat and a press card in the hatband?

Actually, the slouch hat and press card remain but the modern photographic equipment requirements of newspaper photographers are a far cry from the norm of only a few years ago.

Today's newspaper photographer, in an effort to provide a more complete, less stagy, flexible coverage of the feature and daily news events has resorted to the small camera. Instead of wasting time and losing pictures by changing film holders, fumbling with bulbs, guess focusing, trying to remember to cock the shutter, he has shifted to the smaller 21/4 x 21/4 and 35mm instruments. The rapid wind levers and rewind cranks of today's Japanese 35mm cameras assure him of complete coverage without a single possible loss of action. A riot breaks out. The news photographer can cover it from start to finish in 36 exposures—even if it occurs and is all over in 36 seconds. His brother photographer with the more cumbersome press camera may have yet to take the third picture.

Of course we know that there is a place for both the press camera and the smaller units in news photography. Yet it's amazing how many of the duties of the larger cameras are now being performed by the $2\frac{1}{4} \times 2\frac{1}{4}$ and 35mm. Previously the news photographer covering the big football game found himself relegated to a press box high above the playing field. A gigantic tele or long focal length lens protruded from the front of a specially adapted cut film camera. The photographer sighted the giant and fired it with all the flexibility of a gigantic piece of field artillery.

Today's press photographer covers the game from the sidelines, close to the players. With a trim 35mm or $2\frac{1}{4}$ camera he watches every play right at hand. If he wants to cover a spectator in the stands, a coach on the opposite sidelines, he can shift instantly to a tele or long focal length lens which can be hand held easily.

The Japanese cameras have become familiar sights wherever the newsman goes. At the football game, the newsman can put a long focal length lens on his single-lens reflex and be certain that he will not miss one play. The Japanese manufacturers have developed and perfected the instant return mirror so that even the user of an eye-level reflex camera can follow the action on the field through the camera



lens before and immediately after the picture is made. There is no image blackout.

At the site of a fast breaking news event—the three alarm fire, a newsman hitches his Japanese camera up to the electric motor drive. Even with the limited illumination of the fire itself, he can shoot a complete series of the building's collapse. The fast lenses allow him to shoot it in color if his paper is using it—and a lot of papers are doing just that.

Throughout the country the use of color in newspapers is really gaining ground—thanks in a large part to the 35mm camera. The news photographer shoots negative color film. In minutes, it's processed back at the paper and ready to go to the engraver. Either color or black-and-white reproductions can be made. The emulsion speed of negative color film, however, is relatively slow. The Japanese f/1.1 and f/1.2 lenses have become essential tools in the gadget bag of the news photographer.



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FUJI Keeps Pace with a Fast-

During its 25-year growth to one of the world's top-rank film manufacturers, research has put Fuji into nearly every branch of the photographic industry.

At the sprawling plant at the base of Mt. Fuji, one of the largest buildings houses the Fuji Research Institute. This is the creative brain of the 6,000-man Fuji organization, which produces 1,200 different optical and photosensitized products.

Fuji is a large producer of raw optical glass. In the country which makes the world's most advanced optics, Fuji's own Fujinon lenses rank along with the other famous names.

This rich experience acquired as a film and lens maker, Fuji has put to good use in designing its Fujica 35 cameras. Our aim has been a modestly priced camera that meets the needs of both amateur and professional photographer. The reception given the Fujica 35ML all over the world leads us to think we have succeeded.

Now another camera of the Fujica 35 group is ready to face the critical audience at the annual MPDFA Show in Philadelphia. We think it is destined to become an important camera in the medium price range. We invite you to examine it.

A FUJI FILM INDUSTRIAL PRODUCT

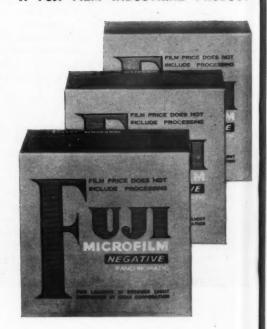
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Treats your film like a fine camera should, because it's designed by film makers.

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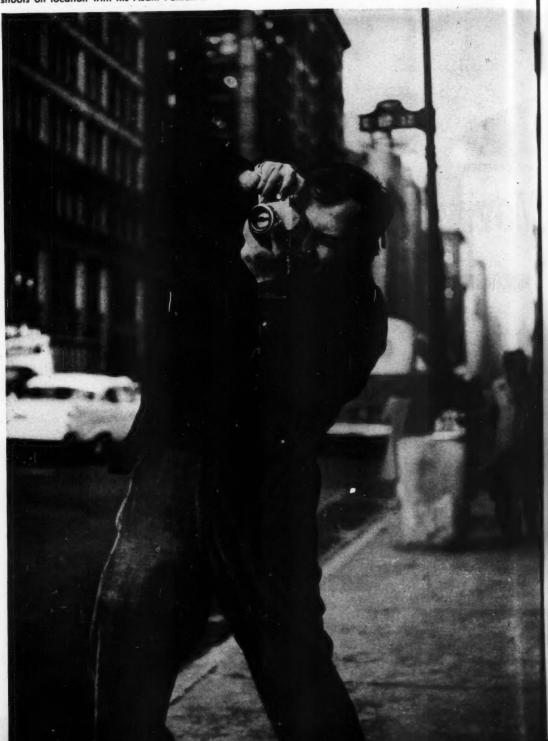
PICTURES



Fuji Photo Film Co., Ltd.

Ginza Nishi, Tokyo

Photojournalist Bruce Davidson shoots on location with his Asahi Pentax K



The photojournalist depends on the fastest lenses, the most reliable cameras and versatile accessories to produce the thousands of photographs, posed and candid, which appear in magazines throughout the world. No magazine photographer is as conscientious, as discriminating, or as well equipped as the American photojournalist. Today he can reach into his gadget bag and pick out a truly amazing number of cameras and lenses, which allow him to make shots considered absolutely impossible only a few years ago.

The photojournalist covering a news event, for instance, is now almost completely freed from the handicaps of dim light. Very fast Japanese lenses allow him to shoot sharp photographs in illumination where he can barely see. Even if he needs a wide-angle lens, he can take advantage of extremely

large apertures.

Often, its just about impossible for the photojournalist to get sufficiently close to his subject—a king in a parade, a statesman delivering a speech on the floor of an assembly room. The photojournalist can turn then to the single-lens reflex or rangefinder camera complete with long focal length or telephoto lenses and shoot pictures which make his subject seem only inches away from his camera.

Light alloy lens mounts, automatic and preset diaphragms enable the photojournalist to hand hold shots which previously would have required tripods and time exposures. And these older lenses would have cost him far more than his versatile modern

ones.

Now let's step down Cape Canaveral way in Florida to see the photojournalist covering rocket launchings. Electric motor drive 35mm cameras make sure that not one single split second of the firing goes uncovered. The equipment is not bulky and heavy as lead either. After the firing, the photographer can pocket his motorized unit and camera and go home without further ado. The problems of standardization have always weighed heavily on the photojournalist who must carry a great many divergent pieces of equipment with him. By producing cameras and lenses utilizing the most popular international screw threads and bayonet mounts and making all sorts of adapters available, manufacturers have simplified the photojournalist's equipment, allowing him almost complete interchangeability between lenses and cameras.

The vast diversification of equipment, rangefinder and reflex cameras, fast wide-angle or tele lenses has not been made at the expense of mechanical or optical qualities. By adhering to rigid factory specifications and undergoing heavy pre-manufacturing tests among American photographers, the Japanese equipment has arrived on the scene ready to go in every sense of the word—ready to combat the humid dank of an African safari adventure, ready to be lowered in a metal or plastic diving tank for underwater photography, ready to go aloft in rarified atmospheres to portray the newest jets in action.

The sharpness and detail of many photojournalists' work in America's leading magazines stands as actual proof of the professional's acceptance on Japanese photographic equipment. Actually, it was the photojournalist in Japan who first discovered, along with the G. I., just how good the Japanese equipment was. Today, many photojournalists consider their Japanese equipment among their most prized possessions. The J. C. I. I. tag (see page J-42) on the equipment has come to mean to the photojournalist that he has an instrument which has been fully tested and can be relied on in the toughest of circumstances.



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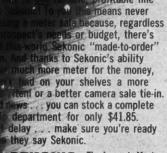
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\$15950 The new AIRES V is the world's most complete camera. It combines a built-in light meter, built-in viewfinders, sharp f:1.5 lens that does away with the need for flash...and its true lens interchangeability makes the AIRES V an

expandable camera. Cameras with these features usually sell between \$300 and \$450; yet the AIRES V costs only \$159.50, plus case. Buy the whole outfit and move into the "big league" for less than the cost of other fine cameras alone. See the expandable AIRES V today.



The AIRES IIIC is already a 35mm. classic acclaimed everywhere. One top photo editor reports the Aires f:1.9 lens "so sharp it draws blood." A leading consumer magazine calls the workmanship of its 1/500 sec. shutter, "flip" wind and other mechanical features, "excellent." Its

parallax-corrected, white-framed viewfinder is unparalleled. What more could you want? Expandability? Now you can have it by adding Kaligar auxiliary telephoto and wide-angle lenses. Together, Kaligar lenses and the Aires IIIC are your passport to greater picture pleasure. See them at your camera dealers today.

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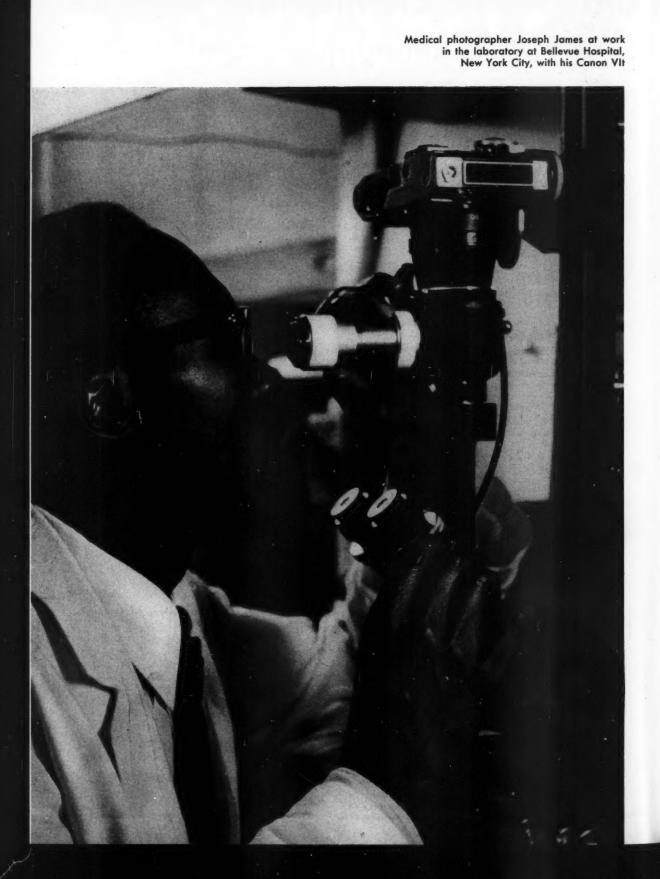
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Scientific and medical photography is quite different in theory, method, and use from other aspects of picture making. The scientific photographer has a more vital role. With his photographs, he must chart chemical changes, organic disturbances. He is little concerned with the scenic beauty of the actual picture image. What the picture shows, what it can say to him when the negative or print is analyzed into scientific terms is far more to the point.

Much of the scientific and medical photographic work finds the camera peering through various complicated scientific instruments. It is often necessary to resort to extreme magnification. Securely perched at the microscope eyepiece, the camera first of all must be relatively vibration free. The shutter must operate with extreme efficiency yet with little or no "shutter bounce" which might disturb image sharpness or change the extremely critical focus of the instrument. The camera must be mounted with fantastic accuracy. As magnification increases, the tolerances for error in focusing, film plane alignment and focusing mount rigidity are reduced practically to the point of non-existence.

The Japanese camera bodies have been employed in medical and other scientific labs for many years now. They have gained reputations for reliable performances after thousands of exposures. In addition the manufacturers have, in the case of rangefinder cameras, been able to supply the laboratories with excellent devices to allow critical focusing through the microscope with the camera in place.

The Japanese single-lens reflex has also come into its own in the scientific-medical fields. The doctor or lab technician is relieved of the need for separate ground glass focusing devices. Using the actual viewing and focusing reflex system built into the camera, he has a simple, accurate method of seeing just what the camera sees at all times. By researching and developing an extremely smooth but virtually shock resistant mirror reflex system within the camera body, the Japanese camera manufacturers have been able to overcome one of the major problems scientists have had with spring-loaded mirror reflex cameras over the years.

In addition, the single-lens reflex manufacturers have concentrated their efforts on producing extremely critical magnifiers for scientific use which allow fine examination of the ground glass focusing screen under higher than normal magnification.

The brightness of the ground glass has also been a sore point in scientific photography. The actual focusing aperture of a microscope, for instance, is very small. Thus the average ground glass is rather low in light illumination. The Japanese camera manufacturers have been able to increase the light transmission in their reflex systems by reflection coating of optics and the use of costly silver and gold coatings on their prisms. In addition, they have developed ground glass screens with Fresnel condensing lenses which have all but eliminated the actual surface of the ground glass screen. The screen is now so fine that the scientist often feels he is actually looking at the subject through it instead of seeing an image reproduced on it.

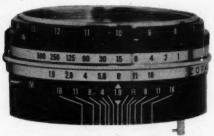
The realm of scientific and medical photography actually covers far more territory than just the lab. Japanese cameras are now being used in hospitals for identification purposes. The simplified controls on the moderately priced units assure perfect results even for the nurses and hospital attendants with no previous knowledge of photography.



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Not only does PETRI lead the field in camera production and in popularity among local camera fans, the Petri name and popularity now tops the list of all Japanese camera exporters. PETRI's Green-O-Matic System, Carperu MXV synchronization: B, 1-1/500 sec., Handy built-in self-timer, Color-corrected ORIKKOR lens and other superior features are your unwritten guarantee when you use a Petri.



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The completely new PETRI f2.8 camera is equipped with Super-Wide viewfinder of special Green Crown glass and built-in automatic parallax compensation... another PETRI first! This Green Crown glass increases visibility, eliminates eyefatigue and insures Easy and Accurate focussing due to the brilliant, self-compensating PETRI-Gold frame which clearly outlines Exactly what your camera lens will photograph and thus simplifies the here-to-fore complicated art of photography. No heads "lopped" off with PETRI-Gold frame!

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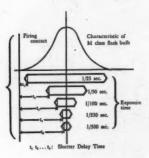
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An entirely new design concept makes this possible. You set the contact selector according to the type of bulb you are using, M, F, or strobe. Then the shutter delay time is automatically adjusted by the exposure time. Peak flash illumination synchronizes precisely with the middle of the opening duration of the shutter iris.

LIGHT VALUE System Once the light value scale is set according to the exposure meter reading, coupling with the lens aperture automatically keeps the correct exposure

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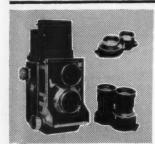
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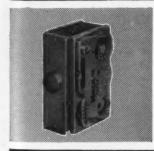
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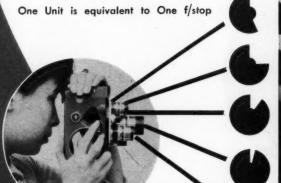


Housewife Martha Goble & her Ricoh Diacord



Mechanic Leonard Masi & his Ricoh 35

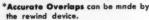
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Clear Cut Shot of fast moving subject can be captured, as shown in the lowest picture, at slot angle 3, film speed 16 f.p.s. (1/300



In shooting picture at the sea-side or ski-ground where the light is extremely strong, POSED FILM con be taken without fear of over-exposure or using neutral density filter.

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* Spool loading, Turret type.

*Lenses: Trio of Cine-Arco f/1 4, 13mm, 6.5mm, 38mm.

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* Film counter visible at all time through the finder.

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MODEL 804



Features

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In this day and age with all sorts of institutes and organizations lending their laboratory approval to various brands of cigarettes, packaged foods, and just about everything else, it's not surprising that purchasers are apt to be skeptical about endorsements of any kind. There's one label, however, well known to anyone who's interested in photography which means a good deal. It's a small round piece of cardboard shown above indicating that the piece of photographic equipment attached to it has been subjected to one of the most thorough examinations and tests ever given to any product. Although the label is quite a familiar sight to anyone buying photographic products, few people realize just how fine a tooth comb the Japanese Camera Institute really is.

Since August, 1954, all cameras and interchangeable lenses have been subject to a compulsory preexport inspection by the Japanese Camera Institute, headed by Kinji Moriyama, which has been charged by the Japanese government with preserving the standard and quality level of all Japanese cameras.

The inspection doesn't limit itself to a sampling of camera manufacturers. Actually every single camera exported is examined prior to shipment by a staff of JCII (Japanese Camera Inspection Institute). Each staff member must be a graduate of a college machinery course with at least one full year of camera inspection experience. Each camera or lens must come up to 71 standards set down and published as

the Japanese Industrial Standard. Some of the tests include: outward appearance, exactness of lens aperture, resolving power, vignetting, rangefinder accuracy, finder accuracy, shutter speed error, and flash synchronization. The entire camera is tested for durability in a special machine which vibrates it 2mm, 2000 times a minute for five minutes.

The various items tested are divided into three catagories of importance and a certain number of points is assigned each item. If the camera or lens doesn't earn the score necessary for passing, it's labeled as defective and it cannot be exported.

The testing apparatus used by JCII is impressive. The shutter speed testing instrument must be capable of measuring errors of less than 10 percent while the instrument used to measure focal lengths from 5 to 1000mm with an error at 1000mm of 0.1mm. Other instruments of similar sensitivity check the resolving power, the infinity setting, the finder brilliance, the rightness of the optical axis of the lens in relation to the focal plane.

Just to find out how one test is actually made, let's look into the problem of lens definition. The test for resolving power is made by actually taking photographs of a fixed test pattern chart. The film, chart, camera to chart distance, and development are all carefully prescribed by law. The film is then examined under a microscope and the lens's resolving



power determined according to formula. The JCII uses the following minimum values to determine resolving power: R equals $\frac{1200}{d}$ at the center of the lens and $\frac{500}{d}$ at the perimeter. The overall resolution must not fall below $\frac{700}{d}$. (D is the diagonal of the picture area.)

Translating these formulas into practical terms for a 35mm camera lens (where "d" is 43mm) the resolving power at the center of the lens must be at least 28 lines, 12 at the perimeter or 16 lines on the

average.

The actual JCII standards have been raised twice since 1954 and will probably continue to be raised

as cameras and lenses improve.

There are three major leaf-type shutter manufacturers in Japan. Two are also in the business of making watches while the third has been making shutters for many years. The JCII requires the shutter to be operated 1500 times at both high and low speeds and 1000 times for inspection of the mechanical and electrical parts of the flash synchronization.

The shutter manufacturers, however, are a good example of how the JCII inspections have spurred the individual makers on to make their own factory tests even tougher than the JCII. The makers operate the shutter 3000 to 4000 times. In addition, a sample shutter is removed from the assembly line from each lot to test wear and error in speed at the various stages.

The camera manufacturers themselves produce the focal-plane shutters. Their own standards are high. Most hold the 1/1000 sec. speed error below

twenty percent.

For a real finishing touch of what the word "inspection" means, let's take a last look into one of the firms making lenses. The inspection begins when the raw material for optical glass is picked. The raw material passes through a sieve and impurities are removed before melting. After melting and cooling, a rough examination is carried out to remove all parts containing impurities. Only optical glass above a fixed level of quality is sent to the lens plant. In the plant the glass goes through finer and finer degrees of grinding and polishing with inspection tests between each stage. Glass not up to standard is discarded. Overall inspections are carried out during lens centering, cementing, anti-reflection coating, and final assembly. Equally high standards are set



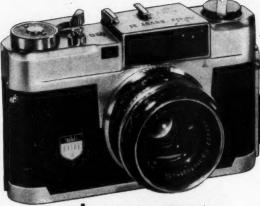
for the lens barrels into which the optics are mounted.

When the lenses are complete, inspections are made for focal length, vignetting, resolving power, flare and aberrations. The inspection for resolving power is even more exacting than the JCII tests. To inspect the resolving power, a vacuum is often used to hold the film absolutely flat on the film plane so that errors in film placement itself will have no effect on the results of the resolving power tests.

A few manufacturers, however, have expressed dissatisfaction with any resolving power tests in which film is used as the test medium. They explain that you must then give consideration to the resolving power of the film itself. On the other hand, the various optical bench devices, known as collimeters, rely far too much on individual operator experience to be of much use for testing resolving power. However, one camera company has invented a measuring instrument employing a cathode ray tube and has it in use at present. This device is now under consideration for adoption by the JCII.

Exactly how are the tests of a camera or lens charted? The illustration on page J-47 is the actual test sheet of a high-priced 35mm camera, taken from the files of one of the leading camera manufacturers. The top block of figures indicates the tests and re-

(Continued on page J-46)



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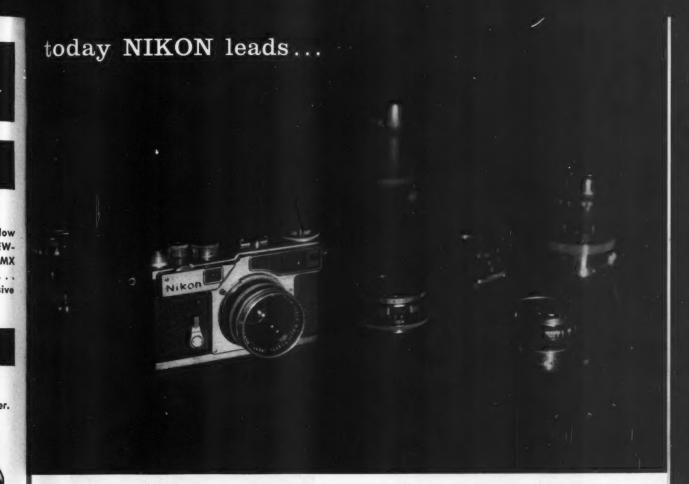


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THE NIKKOR LENSES have brought a new quality to 35mm optics; by achieving high resolution and color correction at all apertures—even wide open. They have given new impetus to the technique of available light photography, and have made great pictures possible under almost impossible lighting conditions.

It has been said that Nikon photography is almost an art unto itself; that it picks up where conventional 35mm photography leaves off. See your Nikon dealer for a personal demonstration of the Nikon SP.



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TWIN-LENS REFLEX CAMERAS RECEIVE FINAL FACTORY TESTING

sults of the findings on appearance, performance, and finish of the outside of the camera. The second block down charts the accuracy of the shutter at all speeds, 1 sec. to 1/1000 sec. plus B and T.

The third block depicts results of the rangefinder tests with plus or minus errors charted at various

focusing distances from 3 ft. to infinity.

Flash synchronization tests occupy the fourth block on the test sheet. Each speed is tested for proper millisecond delay. The type of film used for this actual picture taking test is also noted.

The last block on the test chart shows the performance of a motor driven unit attached to this par-

ticular camera.

While the word "fanatic" is generally not regarded as an accolade, it certainly is one when used in connection with the Japanese manufacturer who, prodded, aided and abetted by the JCII, is being fanatic in regard to camera tests—making certain that no customer of a Japanese product will get other than a perfectly working instrument.

While the manufacturers' and JCII's tests are confined to Japan, the companies' interest in their products certainly does not stop when products are shipped and in the hands of the customer. In New York City, the Japanese Camera Center, now headed by Etsuzo Miyahara, stands ready to assist the Japanese camera or lens owner in giving informa-

tion and advice on his equipment.

It seems incredible today that it was only a few years ago that the first Japanese cameras began to trickle into the United States, brought here by returning G. I.'s who had bought them in Japan. They were enthusiastic and rightly so. Today, the Japanese camera is recognized throughout the world as a prime example of craftsmanship and design.



RAW OPTICAL GLASS BLANKS ARE INSPECTED FOR FLAWS



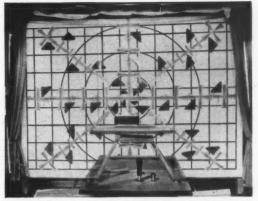
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FACTORY TEST SHEET FOR EACH CAMERA IS KEPT ON FILE



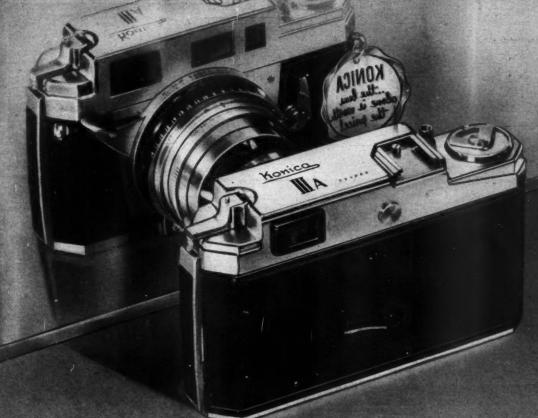
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NEW FILMS

(Continued from page 75)

a film emulsion was not based primarily on its speed. He was not able to express, in objective terms, what he liked or disliked about a particular film material, but his subjective evaluations were firm. He based his opinions entirely upon experience, and the word "quality," although not defined, was used freely to express his viewpoint. Of course, "quality" was related to the characteristics of a finished negative. Emulsion speed was not a factor per se.

Photographers today think differently about film speed. As a matter of fact, the prevalent attitude seems to be just about the opposite to that of the old-timers. Photographers now too often want to give the least possible exposure, largely because they have been taught during the past decades to think more about capturing moods, spontaneous expressions, off-beat situations, etc., than about photographic perfection. Thus, high film speed is uppermost in the minds of many modern workers.

Let me repeat that in my opinion far too much emphasis is being placed today on speed for speed's sake. The timehonored attributes of photographic excellence are slipping into the background as a result.

Practical considerations

In the practical world of photography we should be interested in achieving the best possible photographs under any particular conditions. In this sense the higher speed films have extended the limits of photography by enabling pictures to be made under circumstances and conditions too severe for slower films. Kodak Royal-X Pan and the recently introduced Agfa Isopan Record are admirably suited for photography under very extreme conditions because of their exceptionally high speed. But that's about as far as I would go in recommending such films. These films have a higher than desirable fog level. they must be rather critically exposed for optimum results, their graininess characteristics are such that enlargements of only a few diameters are permissible and they are not outstanding with respect to definition and sharpness. It is pure folly to standardize on such films for general purposes. Yet there are those who have.

It is far more sensible to use particular film types for specific purposes, and possibly standardize on films such as Kodak Tri-X or Ansco Super Hypan as

a general purpose high-speed material. I recently made a series of tests on Ansco Super Hypan film and I was astounded at the quality of the results, especially when considering its speed. It is definitely a high-speed film, although not as fast as Royal-X Pan or Isopan Record. I found its definition to be even better than some slower films, and its graininess properties were superior to the highest speed films. I am sure that other films have corresponding characteristics, but Super Hypan just happens to be the film I have tested most. But the point I want to make is that overall reproduction quality is better when films are selected that have adequate speed to comply with the circumstances. Photographers should stop being speed-crazy and think more in terms of picture quality.—THE END

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the MOVIE MAKER

by MYRON A. MATZKIN

Here's some sound professional advice on making indoor movie lighting more successful.



Indoor movie making often becomes a chaotic mixture of tangled wires, blown fuses, and tortured nerve endings. If it all meant good footage, one might be inclined to say that it was worth

it—but unfortunately, confusion isn't the best ingredient for movie making. That's why we asked professional cinematographer Albert Mozell to develop a few simple lighting techniques that could be applied to a variety of film making situations. For more about the actual practice of good motion picture lighting see pages 96 and 97. While chatting with Al Mozell one afternoon, we discovered that he faces the same problems as any other movie maker in his own family filming.

"I live in an apartment with only two circuits available—somewhat less than you might find in an average studio," he noted dryly.

We thought that this might discourage anyone who works with everything he needs all day long—only to find himself stymied in shooting something

as simple as a birthday party. "Well, not really," said Mozell. "The first thing you've got to do is determine which outlets are on what circuit. I find that removing all the fuses but one and then checking each outlet with a test light is the fastest way to do it. Every outlet that lights the test lamp is on the same circuit. I mark them No. 1 with nail polish or a small sticker. I take out the first fuse and put another one back into its own socket and make the same test again. Once I know where the circuits are, I can prevent overloading. You know, a photoflood draws about four amperes and the average household circuit carries about 15 amperes of electricity. Thus, you can safely use three photofloods on one circuit without blowing a fuse. By using both circuits I can set up five lamps for a scene. It's not safe, by the way, to substitute a 20 ampere (Continued on page 150)



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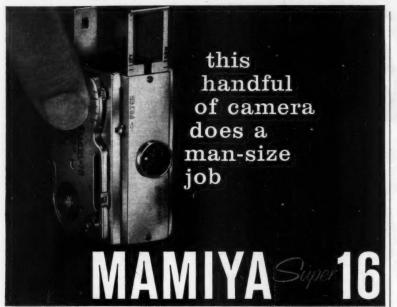
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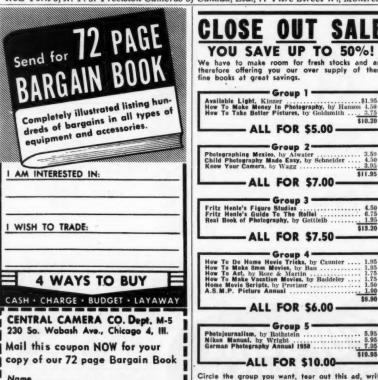
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MOVIE MAKER

(Continued from page 148)

fuse for a 15 ampere one. Your house wiring just won't carry the extra load -without the danger of fire. Also, if you have a washing machine or refrigerator on the line, don't use more than two floods-since heavy appliances use as much as 50 percent of the power."

Al had some other ideas about keeping confusion to a minimum.

'Quite often, when you're using two or more circuits to light your scene, you may want to unplug one lamp. All the wires look alike and you just keep pulling them out until you find the right one. Instead, buy about 30 ft. of wire for each lamp-with a different color wire for each unit. If you've ever rewired a lamp or fixed a light plug, you'll be able to easily rewire the photoflood socket. The color serves as the light's identification and the extra length allows you to lay the wire out of the way of the action. You can also get a multiple outlet box with a dimmer switch. This permits using lights at half-power when setting up the lamps before shooting.

"By the way, this is almost academic, but photofloods get mighty hot-so it's a good idea to make youngsters and adults alike aware that they can be burned if they touch them."

Flexible equipment

We finally got around to the major question involved with indoor lighting -just what does the amateur need in the way of equipment?

"The barlight, particularly the flex-ible type or one with a bounce light attachment can be very useful-but not by itself. You really need three or four reflector floods, a reflector spot, a baby spot, Gator Grips, and a few light stands for top effectiveness.

"However, just the addition of one or two floods to your equipment can make a big difference. I like the Gator Grips because you can place them almost anywhere with maximum security and without worrying about damaging furniture. I often drive small brads into the wall and attach light and grip to it when I want a flood high above the set.

"Incidentally, when using bounce light for color film, make sure that your ceilings are white. Colored ceilings usually give processed film an over-all tint that can be unpleasant."

Mozell follows his own advice, incidentally. After a week of shooting professionally inside of a studio, he spends his weekends making movies of his family-with an 8mm camera. -THE END

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35MM

(Continued from page 28)

The second way to use FG #7 diluted 1:15 is to dilute the concentrate in a 9% solution of sodium sulphite instead of in plain water. If that sounds complicated it isn't. Sodium sulphite is an inexpensive chemical (about 40 cents per pound jar) which, in addition to its other development functions, is commonly used to "put the fine grain" into fine grain developers. With sodium sulphite added FG #7 becomes a fine grain developer; in this form it is intended for use with high speed films.

Compared to FG #7 diluted 1:15 in plain water, the sodium sulphite formula gives a hair less film speed, a much shorter developing time, a very much smoother, graininess—masking look, and a noticeable decrease in definition. I think that you would get just about the same loss of definition with any developer which gave the same minimum graininess effect.

This is not entirely a bad thing, in some circumstances. For example, in portraits of young ladies an emphasis on extreme definition may lead to the end of a beautiful friendship. Here that smooth, non-revealing, very finegrain look is more appropriate.

Making the fine-grain formula

To mix a 9% solution of sodium sulphite you dissolve 45 grams of it in 15 oz. of water (or 22 grams in $7\frac{1}{2}$ oz). No scales? Well, no problem. Edwal supplies a little plastic "speed cup" which holds just enough sodium sulphite for 15 oz. of solution. When I use this I get the water to about 68-69F, then stir in the sodium sulphite. While this is dissolving completely I turn out the light and load the film into the tank. Mixing the chemical into the water tends to raise the temperature one or two degrees, usually, so by the time I get the film loaded the 9% sodium sulphite solution should be fully ready at 70F. Then I toss in the FG #7, give a quick stir and pour it all into the tank.

When using added sodium sulphite the developing time is just half that when using FG #7 diluted 1:15 without sodium sulphite—that is, 8 minutes at 70F for fast films, instead of 16.

Edwal developing instructions are based on a film classification system. Films are designated as Class I, II, III, etc., and developing instructions apply to a whole class of films, not a single film, generally. My experience has been that the current Edwal film classification is incorrect with regard to Agfa films. These are currently classified: Agfa Isopan FF, III; all others V.

I believe that Isopan FF should be in Class I, Isopan F in Class III, Isopan SS probably in Class V, and Isopan Ultra in Class V. The Edwal instruction sheet may be changed from time to time so be sure to check the film classifications carefully.—THE END

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(Continued from page 24)

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MODERN TESTS

(Continued from page 93)

good at f/3.5. At f/5.6, both Iscos seemed to reach excellent maximum definition and held it right down to f/22.-H.K.

HOUSING FITS MOVIE AND STILL CAMERAS



Specifications: Ciampi Starr Universal underwater housing. Construction: ¼-in. clear plastic body with ½-in. plastic lid. Seal: O ring seal secured by lever and threaded wheel. Controls: Three O ring controls with choice of shutter cocking, release, diaphragm setting or focusing. Price: \$49.95. Manufacturer: Richards Aqualung Center, 233 West 42 St., N. Y. C.

It's only a short step (or dive) from strapping on a pair of swim fins and a face plate to taking underwater stills or movies. The usual procedure is to get a waterproof housing designed specifically for your camera—and this can be costly. Even plastic housings can reach the \$100 class—depending on the number of controls and other factors. But the Ciampi Starr plastic housing is designed to accommodate any 35mm still or 8mm movie camera and even some magazine 16mm's. What's more, it's one of the very few housings that sells for less than \$50 with three controls. You can either mount the controls yourself and save a few dollars, or have Richards Aqualung Center do it for you. However, mounting controls can be a bit tricky. The manufacturer claims the housings will withstand pressure down to 125 ft. However, we tested to only 50 ft. With a twin-lens reflex mounted in the case, we found it handled easily when the proper amount of weight needed for neutral buoyancy was added. We used ordinary skin diving weights, but special weights for the housing will be available soon. The O ring seal between the lid and the housing kept our camera perfectly dry. More important, perhaps, the controls operated freely

(Continued on page 159)



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MODERN TESTS

(Continued from page 158)

-without any sign of binding because of pressure.

While reflex focusing may be used with the Ciampi unit, we found it almost impossible to see a clear enough image under water. We would like to see some type of field frame etched on the front of the housing itself so that viewing and photographing could be carried out with the top of the camera closed.

Incidentally, an accessory flash for the unit will be on the market soon. -M. A. M.

ARCO: 8MM CAMERA WITH 16MM FEATURES



Specifications: Arco 8 Model 803A. Lens: Focusing Cine-S Arco 1/2 -in. f/1.4, Arco focusing 1½ in. f/1.4 Tele, and Arco fixed focus ¼ in. f/1.4 wide-angle on 3-lens turret. Speeds: 8, 16, 24, 32, 64 fps and single frame. Focusing: Through lens. Finder: Matching front elements on turret. Motor run: 8 ft. on one wind. Other features: Variable shutter, backwind, adjustable footage counter, backwind counter and built-in Sekonic light meter. Price: \$398. Importer: Myers Distributing Co., 623 S. Gay St., Knoxville, Tenn.

The Arco 8 is no ordinary movie camera. It's loaded with things that are usually reserved for 16mm cameras — from variable shutter to through-the-lens focusing. While it definitely can be used as a snapshot movie camera, the Arco is designed for the advanced amateur interested in exploring the possibilities of 8mm film making. Its three most outstanding mechanical features are backwind, and the previously mentioned throughthe-lens focusing and variable shutter.

While the lens occupies different positions for viewing and focusing,

(Continued on page 163)



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MODERN TESTS

(Continued from page 159)

both operations are carried out through one eyepiece. A lever on top of the camera is marked "finder" and "focus." When the turret is turned to move the lens into focusing position, you switch the lever to "focus," changing the alignment of the finder optical system. This allows you to focus through the lens itself. After the lens is replaced in filming position, in front of the film aperture, the switch is moved to "finder." This lines up the eyepiece with the matching front viewfinder element on the turret. Each lens has its own front finder element.

We do hope that the manufacturers are planning to introduce a rackover for the Arco. The rackover would permit moving the entire camera after the lens has been positioned for shooting, so that the lens is realigned with the subject. While the finder is clear and bright and shows a large image that can be seen even with glasses, it is not parallax-corrected for distances closer than 10 ft. However, it does have indicators for anamorphic lenses. A parallax correction lens for finder elements is available.

The backwind is rather novel, too. departing from normal design. Instead of being geared to the camera drive. it's positioned on the film chamber door and engages the feed spindle of the camera. A button on the door releases the film for rewind and also activates a rewind footage counter that keeps tabs on how much film is wound back. The regular footage counter, located in the finder of the camera, can also be adjusted to account for rewound film. Thus, if you wind back three feet of film, starting after 20 ft. have been run normally through the camera, you move the finder indicator back to 17 ft. When it reaches 20 ft. again, you've reexposed the three feet.

The variable shutter makes it possible to expose film at a shutter speed as high as 1/1200 sec. at 64 fps. Normal speed at 16 fps is 1/35 sec. The variable shutter control works smoothly enough to be used for fades as well.

If we can find fault with the built-in Sekonic exposure meter at all, it's with the film speed scale which has indexes only to 160. We would like to see it with a provision for films with exposure indexes as high as 400. However, it reads accurately and is sensitive enough even for available light.

Tests with the Arco proved that the camera is capable of delivering better than average footage at all fps speeds. Lenses performed well, too.

——M.A.M.







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ZOOM LENS

(Continued from page 69)

rear system can then be designed to correct the stablized images.

We tested the new lens on a lens bench using a "star" source, which is really a small illuminated pinhole at the focus of a high quality telescope objective. Examination of the images formed by the Zoomar lens with a microscope of 50X revealed how well the astigmatism, coma, and lateral color have been controlled throughout the zoom focal length range. When the lens was stopped down



Voigtlander Zoomar shows picture edge pincushion distortion (slight inward curvature of building on left) at focal lengths of 50mm or more, slight reverse effective (barrel distortion) below 40mm. However, this does not show up with human subjects.

to about f/4.5, the "star" images became tight and very small, free of visible color fringes.

The next test tried was a series of resolution chart shots, both by direct vision and a few photographs. The resolving power at f/2.8 (wide open) ranged from 45 to 50 lines per millimeter, slightly better at the 82mm focal length setting. However, the lens was stopped down to about f/5, the central resolution went up to as high as 60 lines, but again with a slight drop at the 36mm focal length setting, (wide-angle) to around 50 or 52 lines per millimeter.

All things considered, the zoom lens design has definitely reached into the higher quality 35mm miniature camera field. The sharpness required for the range of enlargements that the 35mm negative must be put to, has been achieved. We now have the first successful zoom lens for still cameras. Others will follow.—THE END

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PICTURES in a MINUTE

by JOHN WOLBARST

It's the latest: Black-and-white Polaroid Land copies in a minute from 35mm color slides.



An amazing new gadget is turning up on camera store counters across the country. It's the Polaroid 35mm Slide Copier. As the name implies, it's a device with which

you can make black-and-white copies of any 35mm color slide. It uses standard Type 42 Polaroid Land film and the copied pictures are the same size as those made in any Polaroid camera except the Highlander models.

Let me make clear right away that this device is not intended for sale to the general public. It's a fairly complex and very expensive affair. The idea is that your photo dealer buys one and sells the copying service to his customers—that's you and me. It is my understanding that the price for a copy print ranges from about 30 to 40 cents, depending upon the store. Having heard about this service I took a trip down to Willoughbys, the giant store on 32nd St. in New York, and

with the kind cooperation of the management tried a few copies.

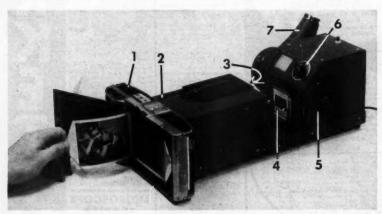
The results were only sensational. I was amazed. The reproductions here don't begin to show the excellence of the copies and the wide range of tones they include.

Here are some pointers about color slide copying. Slides must be sharp; the images are enlarged nearly 3X on the copy print and any unsharpness shows up.

Slides which depend for their interest solely on a single patch of color or some color combination are likely to make disappointing black-and-whites. But correctly exposed color portraits consistently turn out to be fine blackand-whites.

The Polaroid print format is a bit shorter, lengthwise, than the 35mm color slide format. So, a bit of the subject in the color slide gets cropped out of the picture. On the machine I used this cropping always occurred at the right hand edge of the slide. Of course, if you try to copy a "super slide" (those are the ones with a 1% in. square picture area) a large part of the picture will be left out of the copy. However, by turning the slide either 90 or 180 degrees from "normal" you might be able to juggle the important parts of the picture into the area that gets on the copy.

(Continued on page 168)



HOW IT WORKS: Polaroid 35mm Slide Copier is made by Edgerton, Germeshausen and Grier, Boston, Mass. It consists of the back half of a Polaroid Land camera (1) attached to a rigid metal box (2) with a fixed focus lens (3, out of sight here) in a fiash sync shutter. The slide (4) fits in a holder in front of a ground glass window in the box (5) which contains a complete

electronic flash unit. Brightness of the flash is controlled by a knob (6). With the unit on and warmed up and the slide in place, you press the shutter release (3), which causes a flash to illuminate the slide. Then you develop the Polaroid print in the usual way. After a minute it's removed and coated. A hair drier-type blower (7) is used to dry the print coating rapidly.



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PICTURES IN A MINUTE

(Continued from page 166)

This copying service is one of the most interesting uses of pictures in a minute which I've seen, and for ease, quality and cost it's a whiz.-THE END



PORTRAITS: The correctly exposed slide (above) was copied easily with a "normal" setting of the copier. The very dark slide (below) required a brighter light setting.





GREAT RANGE OF TONES: In the original the head of the statue is a bit overexposed while the base is under-exposed. A "normal" setting reproduced the range of brightnesses with remarkable fidelity.



SMALL RANGE OF TONES: This slide had delicate, pale colors, was in fact almost a black-and-white scene. With reduced exposure it made a perfect

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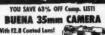
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